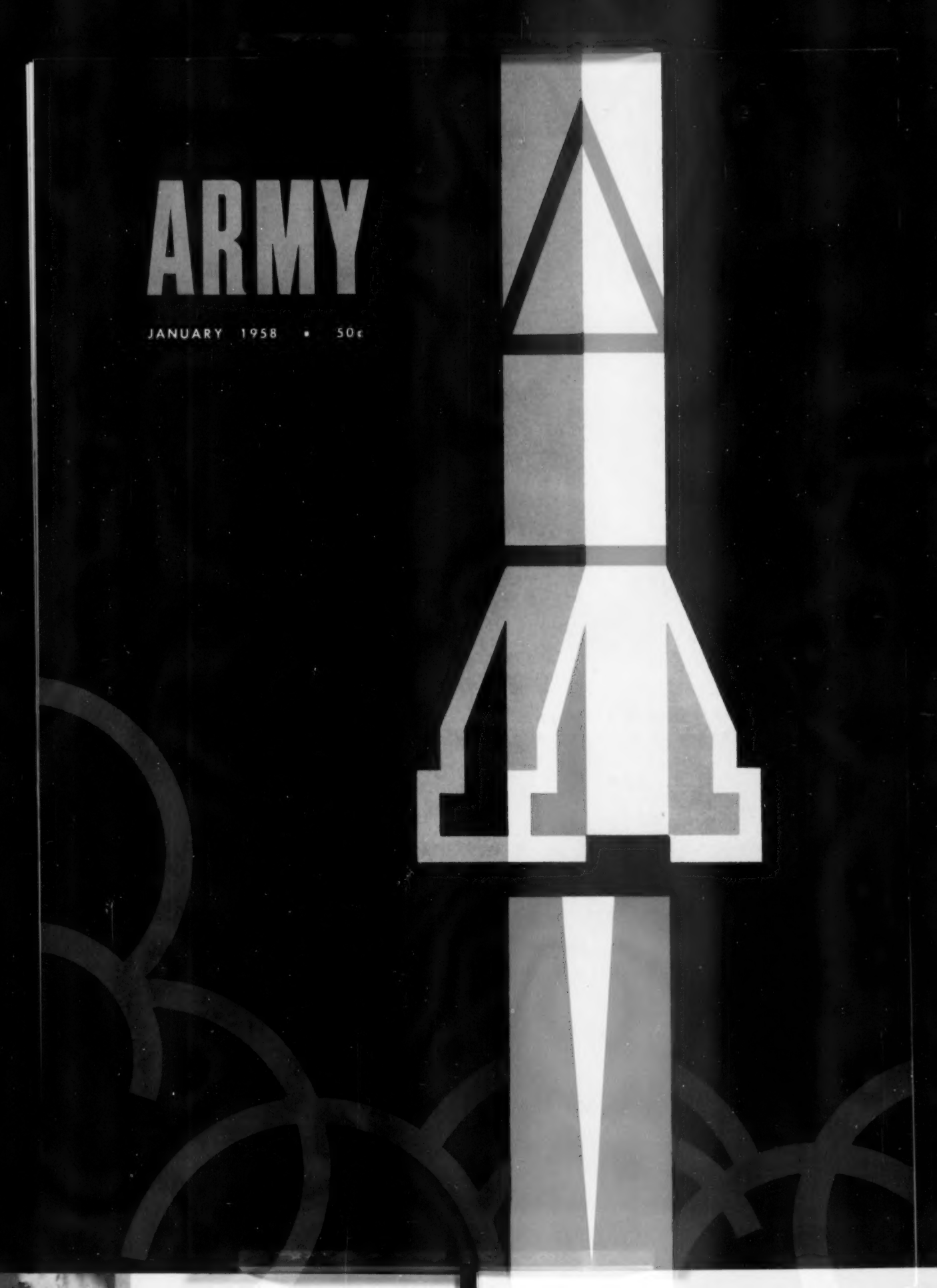
ARMY

JANUARY 1958 • 50¢



Using a visual aid to illuminate a math problem, a civilian instructor at "West Point Prep" illustrates the academic program of the School

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The U. S. Navy maintains a similar school at Bainbridge, Md., for men desiring to attend the Naval Academy.

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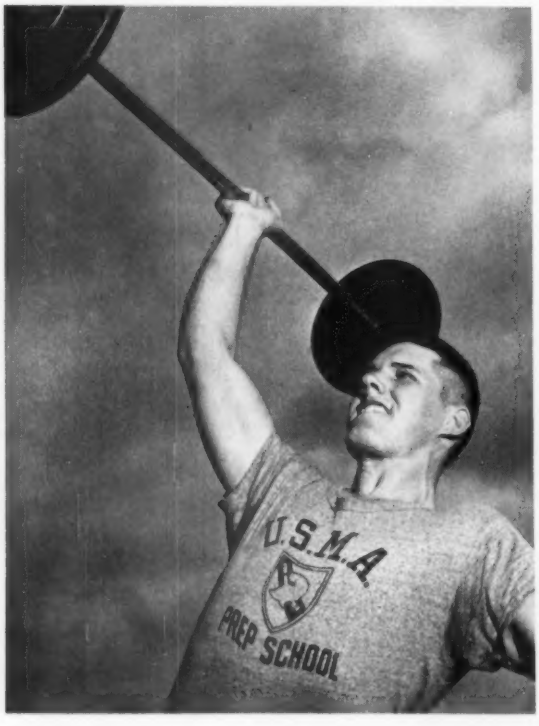
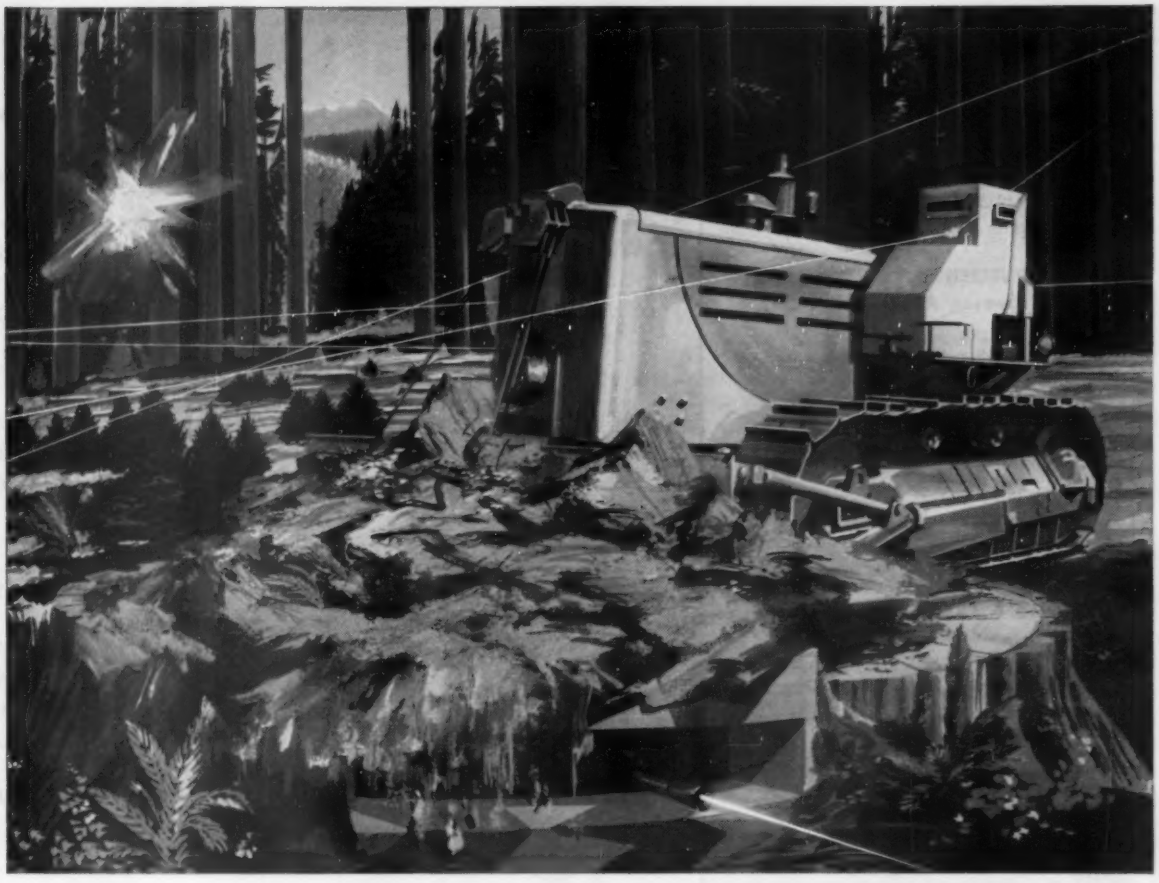


"West Point Prep" boasts a distinctive shoulder patch



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ARMY

magazine of the **ASSOCIATION OF THE UNITED STATES ARMY**

Vol. 8 • No. 6 • January 1958

EDITOR & PUBLISHER
Lt. Gen. Walter L. Weible, *USA, rtd.*

ASSISTANT PUBLISHER
Col. Arthur Symons, *Arty-USAR*

Assistants—Arthur S. Welch, Esther E. Bennett, Marguerite M. Mattison, C. M. Pierce, LaRue W. Stump, Mildred M. Guthrie, Marlene F. Wilson, Lois Jordan, Robert Coleman

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N. J. Anthony
James C. V. D. Brown

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ARMY is a professional military magazine devoted to the dissemination of information and ideas relating to the military art and science representing the interests of the entire Army. *ARMY magazine strives to—*

Advance man's knowledge of warfare in the fields of strategy, tactics, logistics, operations, administration, weapons and weapons systems.

Advance man's knowledge and understanding of the soldier as an individual, as a member of a trained unit, and as a member of the whole Army; emphasizing leadership, esprit, loyalty, and a high sense of duty.

Disseminate knowledge of military history, especially articles that have application to current problems or foster tradition and create esprit.

Explain the important and vital role of the United States Army in the Nation's defense and show that the Army is alert to the challenges of new weapons, machines, and methods.

Advance the status of the soldier's profession.
—AUSA By Laws, Par. 13 Article II

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Design of Army's Jupiter C by Lou Nolan.

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THE ARMY H-23D . . .

HELICOPTER WITH *TOMORROW BUILT IN*

Design of the basic H-23 helicopter was largely governed by a doctrine of *ruggedness*. It has produced a dependable helicopter, with a record of safety unequalled in its class.

Now, in the H-23D, a completely new 1000-hour+ drive system is introduced, seen as a major break-through in lower operating costs. A full-time 250 horsepower is available and, significantly, without "redline" restrictions warning of jeopardized service life. Thus, *ruggedness* has also afforded *growth potential*.

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HILLER HELICOPTERS **PALO ALTO, CALIFORNIA**

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AXIAL-FLOW COMPRESSOR—10 stages (first stage and inlet guide vanes shrouded)—small, compact, advanced design with one-piece steel construction for last eight stages of rotor hub assures ruggedness plus maximum operating efficiency.

SHORT, SMALL DIAMETER ANNULAR COMBUSTOR—provides high burner efficiency, proven altitude re-start ability, longer life . . . looked "like new" after model testing.

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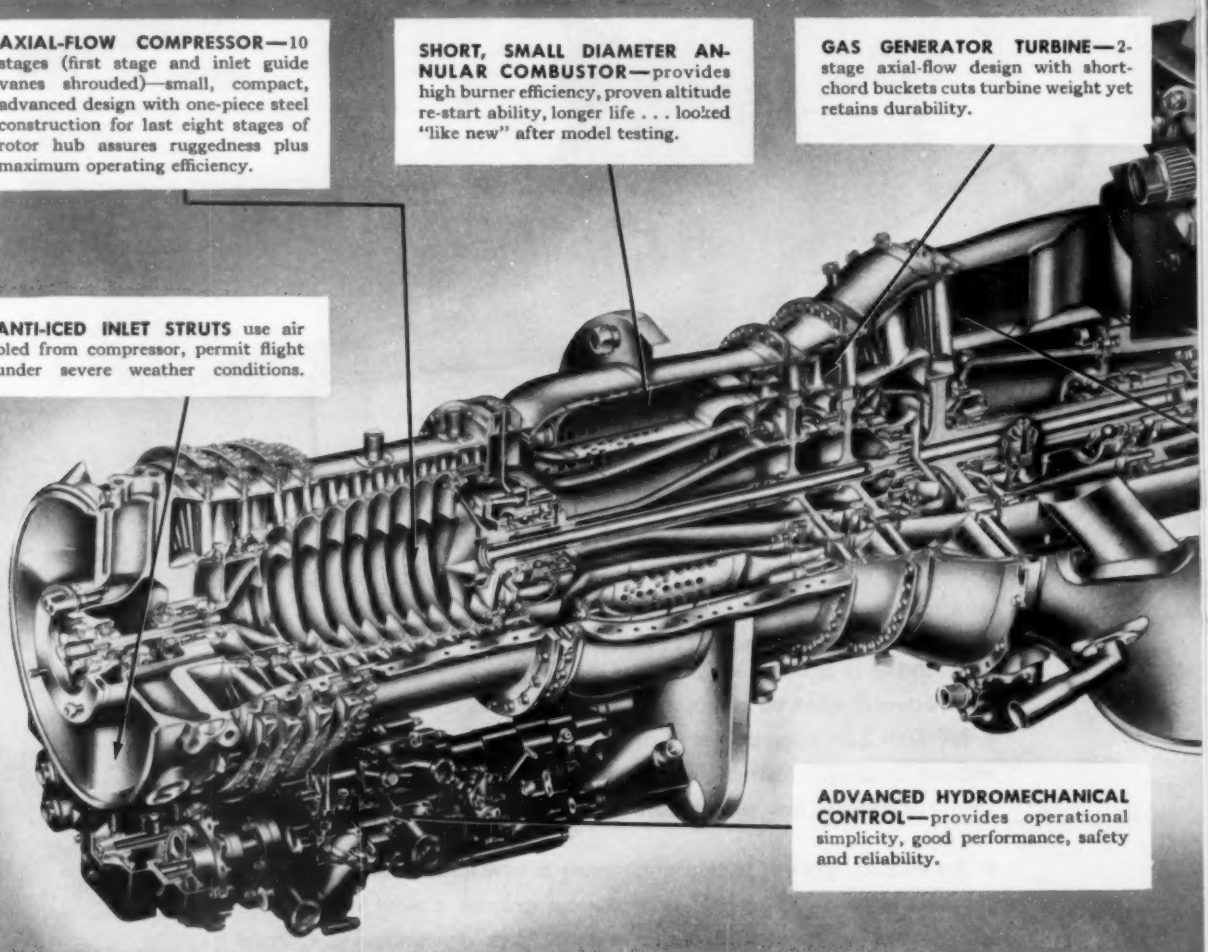
ANTI-ICED INLET STRUTS use air bled from compressor, permit flight under severe weather conditions.



ADVANCED HYDROMECHANICAL CONTROL—provides operational simplicity, good performance, safety and reliability.

T58 FLIGHT TEST PROGRAM began in January 1957 in Sikorsky HSS-1 (left), was recently extended to Vertol H-21D (center) and will include the Kaman HU2K-1 (right). Comprehensive flight, rotor and cell tests have already proven the engine's performance, reliability, control stability and power-splitting ability.

150-Hour Test—is one more reason . . .

FOR HELICOPTERS

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DURABILITY OF THE T58 engine design was thoroughly proved during the 150 hours of rigorous testing, more severe than actual flight conditions. T58 official test results ***exceeded*** all performance guarantees. For example, the T58 produced 1065 military hp, compared to the guaranteed 1024 military horsepower. Normal rated SHP, guaranteed at 875 hp, was increased to 920 hp. Both military and normal rated SFC guarantees were bettered.

RUGGEDNESS OF THE T58 engine design was proved by its exceptional performance under the severe accelerating and decelerating, stops and starts, loads and overloads. Official test results show:

- All required 75 starts exceeded specification guarantees. Typical acceleration time to idle speed bettered guarantee by over 40%.
- All engine throttle burst times were well within guarantee limits. Acceleration times from idle to 100% power were four times better than guarantee.

ADVANCED AERODYNAMIC DESIGN. Engine cut away at left shows the advanced design features that make possible the T58's exceptional performance and ruggedness . . . features that truly promise new levels of military and commercial usefulness for helicopters.

For more information about the T58: call your local G-E Aviation and Defense Industries Sales Office, or write General Electric Company, Section 233-10, Schenectady 5, N. Y.

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THE MONTH'S MAIL

Effect of Sputniki

In 1954 or thereabouts I received *Army Combat Forces Journal* [now *ARMY*] and then skipped it. Since things are in such a state, I wish to become reinstated. Enclosed find check for five dollars for annual membership. I hope inflation has not driven the price upward.

I have a friend who would also like to join. Be good enough to mail her some material explaining AUSA and also a sample copy of *ARMY*. She is the old-fashioned, hundred per cent type of American.

Since Sputniki I and II the Army needs all the friends you can muster. That is my belief since reading the yellow press.

MRS. ISOBEL B. CURL
Toledo, Ohio

Belittling the ROTC

● Thanks and congratulations to Colonel Flanagan for "What's Wrong With Being Military?" in the October issue.

Nowhere, I believe, is the anti-military attitude of which he writes more pronounced than in some of our institutions of higher learning. All too often, the ROTC program seems to be at the bottom of the academic heap.

For instance, at my university, ROTC is not compulsory for freshmen and sophomores, as it is in many schools. Consequently, anyone who takes ROTC in those years is thought to be a little "out of it." There have been instances where college officials heartily discouraged freshmen from taking ROTC on the ground that it is a waste of time. The men who do enroll and who carry on for four years deserve a lot of credit because very often the extra load forces them to stay in college, with all the attendant expense, for a summer session, or even one or two extra semesters in order to graduate with the degrees they desire. This was the case with nearly half of our MS-IV cadets last year.

It would seem that even our Distinguished Military Students have been indoctrinated with this anti-military spirit, because only a pitifully small number are even mildly interested in a Regular Army commission.

There is a never-ending battle between those of us who are thought to be "gung ho" (and are proud of it), and the pseudo-intellectuals. Our cadre officers and noncommissioned officers are without exception the finest group of men I have ever known. They are also generally better instructors than the average college professors. But when they beat the Army drum they are looked upon as either fools or anti-democratic brainwashers.

CADET LT. J. S. MONNINGH
Kalamazoo, Mich.

For Red Diamond Vets

● *The Red Diamond*, magazine of the Society of the 5th Division, is looking for interesting bits of information about the Red Diamond's traditions. If old-timers of the Division know of its past, please write me.

TOM NASH
2009 N. Oakley Avenue,
Chicago 47, Illinois

Sabre for the Queen

● Among the brighter aspects of the recent visit of Her Britannic Majesty to these shores was a picture which appeared in The New York *Herald Tribune* on Tuesday, 22 October, the day following her visit to New York. The picture shows the queen being escorted by Major S. F. Driscoll, the Fort Jay Provost Marshal. I was delighted to see Major Driscoll armed with a sabre.

I think it is safe to assume that the Army Commander at least countenanced Major Driscoll's accouterments, and I devoutly hope that this is a straw to indicate that in the foreseeable future we shall have our sabres restored to us for ceremonial occasions.

Major Driscoll and sabre escorting the Queen past the honor guard at New York City Hall. Lt. Gen. Blackshear M. Bryan, CG, First Army, follows

LT. COL. GEORGE C. ALEXANDER
USAR
Princeton, N. J.

Man the ICBM

Various possible defenses against the ICBM are being explored. The antimissile missile seems the best antidote to the surprise first blow, and the retaliatory ICBM and bomber the defense against subsequent attacks. But the problems of interception lead to greater thought on preemptive attacks on missile launching sites. To meet this threat, such launching sites will be made more and more "hard" or invulnerable—underground storage, mobile launchers, and the like.

One secret weapon and only one is guaranteed to penetrate a "hard" ICBM site: men. Instead of sending over one's own ICBM with a larger thermonuclear warhead to try and overcome the physical protection raised against that very contingency, why not send over future large ICBMs loaded with *men*—a self-seeking warhead guidance system which can really seek out the enemy's ICBM and destroy or seize it? In the latter case, it may even be turned against the enemy. And seizure is the one sure way of neutralizing the threatening weapon. This may seem fanciful, but in the foreseeable future it will be practicable—certainly at a time when the ICBM is still a real threat.

J. C. MANYMEN
Washington, D. C.

Separating the Soldier

● I would like to comment on the subject of the soldier and his pay.

It has become the practice, in some units, to have several "stations" in the pay line for collecting funds for the support of organizations, clubs, relief and welfare societies, and the like. Most men will go along with a "one-time" consolidated fund or a Red Feather Drive. However, the big gripe is about the *several* stations each month, to each of which the men are expected to donate.

There have been instances during the past year where it has cost from five to seven dollars to get to the end of the pay line.

MSGT. AUSTIN R. KEETH
APO 25, San Francisco, Calif.

On Downgrading Specialists

● As a professional intelligence officer, I take exception to Lt. Col. Irving Heymont's "Commissions for Leaders Only" [November], in which he suggests downgrading certain commissioned slots because intelligence specialists are technicians rather than leaders. The trend in in-

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telligence, the article states, has been toward specialization. I venture to say that the Army, in recognizing this trend, is successfully counteracting it by affording specialists the opportunity to achieve a broader military background, and then assigning them to posts where they are officers first and specialists second. My own recent experience is a case in point. After years in various specialist fields and schooling designed to elevate my professional level as an officer, I was appointed chief of a staff section in addition to being charged with more specialized duties.

Colonel Heymont does not give his definition of leadership, nor does he state categorically where the responsibility of the leader begins and that of the technician ends. Of course, the term "leadership" lends itself to a narrow interpretation, such as leading a tactical unit in battle or lining up a logistical unit for inspection. In our complex modern army, however, we must modify our time-honored concepts of leadership, so that they extend not only to the relationship between leader and led, but also to that between the moving spirit and the links in the chain reaction. There is nothing flamboyant about a senior order-of-battle analyst of officer rank directing his subordinates to piece together fragments of a vexing puzzle, but the resulting product of his direction may contribute as much to victory as the seizure of vital terrain by a combat unit.

Colonel Heymont argues that an officer's status is determined by the amount of leadership he must exercise. Whether or not extensive professional knowledge, intellectual stature, sound judgment, ability to assert authority, and dignity and bearing are considered ingredients of leadership, they go into the make-up of any proficient officer, and certainly into that of the intelligence specialist. The PW interrogation officer, for example, must have these qualities to breach the psychological defenses of a high-ranking enemy prisoner. Without wishing to detract from the merits of noncommissioned and warrant officers in the interrogation field, I venture to say that a captured enemy officer, especially one of higher rank, has to be confronted with an interrogator of similar rank in order to effect a favorable outcome in the ensuing battle of wits. A noncommissioned officer interrogator, however capable, who lacks the requisite personality traits and broad experience of an officer, stands a good chance of coming out second best, even though he might portray an officer during the interrogation. Similar examples could be cited to support the argument for assigning officers to other specialized intelligence duties. Furthermore, it appears short-sighted to deny commissions to persons who spend many years of "postgraduate" work in perfecting their knowledge in a speciality, keeping up with rapidly changing developments, both in the general and special military fields, and acquiring new knowledge about the military, political, economic, scientific and cultural structure of the country which absorbs their professional interest during a given assignment.

The solution to what Colonel Heymont poses as a dilemma (although I am not sure it is one) might be found by taking a leaf from the book of the World War II German Army. To distinguish between officers of combat arms and those in more specialized fields, the *Wehrmacht* designated certain personnel as *Sonderführer* (special leader) to fill its needs for linguists in the intelligence field, and *Heeresbeamte* (army officials) to serve as fiscal, quartermaster, administrative, and legal officers. Many in the first-named category and all in the second-named had officer status and were accorded the authority and prerogatives of officers, but wore different rank insignia and held different rank designations. If a distinction were really desirable between officers of combat and support arms on the one hand, and officer technicians and specialists on the other, the establishment of a new officer career field concurrently with the introduction of novel insignia might be preferable to downgrading.

CAPT. GEORGE L. FRENKEL
Fort Riley, Kans.

Correction to Book Review

● I am reluctant to disagree publicly with so able and distinguished an American lawyer as Col. Frederick Bernays Wiener, yet I feel it is necessary for the benefit of readers who may have been misled by the review of *Military Trial Techniques* by Major James L. Spratt [November].

In my opinion, this is a shockingly bad book. It purports to have "been prepared with the primary thought in mind of providing 'non-lawyer' military personnel with a simple, comprehensive and legally sound outline of military courts-martial. . . ." (What other kinds of courts-martial are there?) I find the outline not comprehensive and it is unsound, blundering, erroneous and misinformative.

I advise all who may be tempted to use this book to avoid it at all costs. Don't admit it to your library, office, or orderly room. In this case, I would add *caveat omnia* to *caveat emptor*.

LT. COL. MORTON S. JAFFE
JAGC
Fort Benning, Ga.

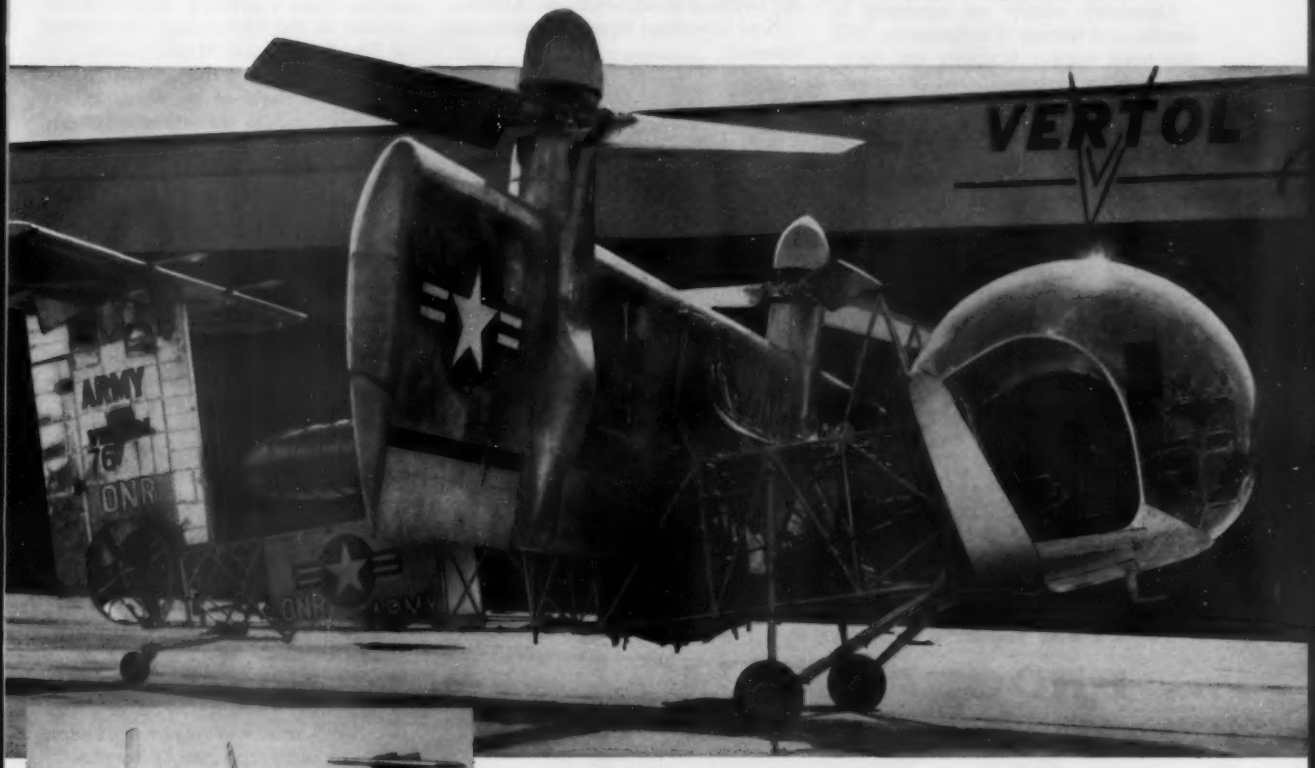
● *Colonel Jaffe has documented his case against Military Trial Techniques for us, but unfortunately space does not permit us to publish it. However, we are prepared to furnish a copy to any reader who desires it.*—THE EDITORS

Vertol tests world's first Tilt-Wing VTOL Research Aircraft

The new Vertol 76 is a true Vertical Take-Off and Landing (VTOL) aircraft, an experimental vehicle that casts a large shadow into the future.

With its ability to take off, hover and land like a helicopter it is independent of all but the most rudimentary landing area. Yet it flies from point to point with the dispatch of a turbo-prop passenger plane.

In this pioneer air vehicle the wing and rotor-propellers tilt as a unit through a 90° arc at the will of the pilot. For vertical flight he rotates the wing upward. To fly level he tilts the wing forward. Given a small runway, he can set the wing at the most effective angle to operate Model 76 as a Short Take-Off and Landing (STOL) aircraft and thus increase payload potential.



The Model 76, soon to undergo flight tests, has been developed by Vertol for the Army Transportation Corps and the Office of Naval Research as part of the military's ceaseless quest for greater mobility and efficiency. From flight tests will come experience and knowledge applicable to the bright future of VTOL in military and commercial aviation.

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Riddle in Communications

● Captain John A. Hoefling, in *Army Times* for 24 March 1956, said: "At company level and below, field communications present a real problem. I have yet to meet a company commander who has not had his radio or wire communications fail at least once when he needs them most." Colonel David P. Gibbs, in "Mental Mobility" [*ARMY*, March 1955], stated: "I do not feel that the ability to control communications has kept pace with our strategic and tactical mobility." Both statements influenced my thinking. I came up with these speculations:

Operations centers are increasing in number and latitude of assignments. Will this trend hamper flexibility and therefore mobility, dispersion, and protection? Doesn't concentration of personnel away from the fighting violate the principle of Mass up front and that of Economy of Force at the rear? Our communications may become overabundant for the rear echelon and sparse for fighting elements.

Too much decentralization may reach a point of no return; that is, too many soldiers would be required for routine transactions. Won't this limit our mobility and require more protection for administrative agencies? By necessity, our communications systems might become too elaborate.

If we face the possibility of damage by mass-destruction weapons and interference by electronic countermeasures, we will need alternate and duplicate communications systems. Maybe we can exploit the capabilities of old visual systems and new air communications centers.

Answers to the riddle may come from complex but coordinated studies in missions, manpower, matériel, money and mind. I cannot supply the answer but General Howze in "Combat Tactics for Tomorrow's Army" [October 1957] confirmed my beliefs and gives an excellent lead on Army aviation as the solution to our electrical communications dilemma.

Now how about visual communications systems?

CAPT. GEORGE A. NIGRO
APO 252, NY

Use of Enlisted Lawyers

● I have just read Major Kent's "Make Use of Our Enlisted Lawyers" in your April issue. I am a drafted enlisted man who happens to be an attorney admitted to practice in the State of New York. I think my experience may be of interest.

After eight weeks of basic training, and on the basis of an area aptitude in electronics together with a 2 physical profile, I was assigned to The Artillery and Missile School for advanced training in artillery ballistic meteorology. I asked a classification and assignment sergeant at my basic training station about the propriety of this action, in view of my professional background. I was told, in effect, that since I had to take advanced training of some sort or other, and the quota for the clerk-typist school was filled from the 3 profiles, it didn't matter, because the Army never uses a man in what he's been trained to do. So at the expense to the taxpayer of $1,500 I was trained as an artillery weather observer. It developed that this was a critical occupational specialty, so I was frozen in it for six months during which I served as an assistant instructor in the Meteorology Department of The Artillery and Missile School.

I went overseas in the same MOS, but owing to a chain of circumstances my situation came to the attention of the command Staff Judge Advocate (SJA). I was interviewed and soon assigned with the SJA as a clerk in connection with Status of Forces Agreements. In addition, I was also legal observer at trials where a trained lawyer is required. This was particularly helpful to the command because many times the several judge advocates were otherwise engaged and I was the only lawyer available. I believe that during this time my professional background was of considerably greater value to the Army than my military training would have been had I been tracking weather balloons.

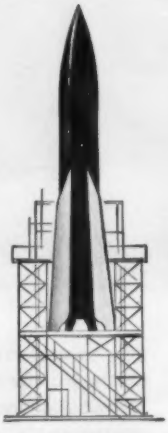
When rotated back to the States I was reassigned as a weather observer, although I had taken steps to obtain a legal clerk MOS. Because I had only about three months remaining, my new unit was reluctant to put me into a permanent slot and helped me get a position with the post SJA. I have since been rendering legal assistance to post personnel, relieving the legal assistance officer of a considerable burden involving mostly routine questions easily answered by lawyers.

It seems to me the propriety of my initial training in a technical MOS is at least open to question. Who can say whether I was of greater value as an enlisted lawyer than as an artillery weather observer? It seems to me the Army could profitably review its classification and assignment system so as to more closely conform to its oft-professed policy of using manpower in a manner that will bring the greatest benefit to the service consistent with civilian background.

SP3 JULES V. SPECINER
Fort Hood, Texas

● *If all persons coming into the Army were to follow their civilian professions or skills, the Army would be rather short of riflemen (of whom there are very few in civilian life) and many other skills such as artillery weather observers. This is an aspect of the situation that Specialist Speciner fails to consider.*—THE EDITORS

how to get
YOUR INVESTMENT PROGRAM
off the ground



The sooner you set up an investment program, the sooner you can begin using your surplus cash to earn more money now or to supplement your retirement income.

As a start, you can read the valuable booklet, "How to Invest," now offered free to servicemen and women by Harris, Upham & Co.'s Armed Forces Department. This booklet explains the various types of securities in detail and gives fundamental rules for successful investing. A complete outline of investment principles shows you how to develop an investment program, based on your own individual needs, resources and objectives.

To get your copy of this helpful booklet, mail the coupon today.

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World's First Unmanned 'Copter

The successful maiden flight of Kaman's pilotless helicopter has added a new concept to military strategy. Flown entirely by remote control, the variety of missions possible with these ships is almost limitless. Using the Kaman robot as a flying TV or motion picture camera, complete battlefield surveillance and target marking are available without hazard to personnel. Also possible is the entry of the robot helicopter into contaminated or hazardous areas.

The control station is portable and can be operated from the ground or in air to air operations. Mission equipment such as cameras, weapons, target markers and detonators can be actuated at the control station.

Kaman is proud of this forward step which has been taken in behalf of our National Defense effort.

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Outer Space: Fourth Frontier of Freedom

The day approaches when command of space may be essential to our national security

Today, our soldiers and sailors and airmen stand guard on the ramparts of the free world ... but at the same time our civilian and military scientists and engineers are hard at work building our defenses on a new frontier. That frontier is Outer Space. There, someday soon, will lie the power to keep the world free—or enslave it.

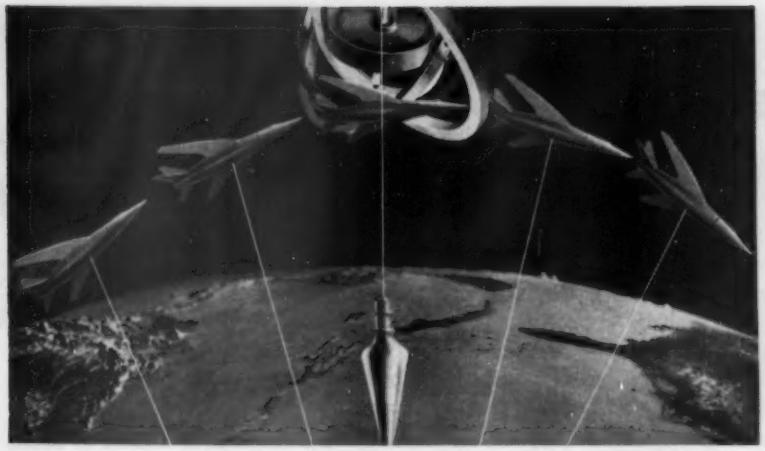
North American Aviation is in the thick of this secret struggle. Its experience with supersonic aircraft and missiles is the greatest in the free world. For several years now this experience has been coming to grips with the toughest challenge of our time—perfecting weapons that will not only span the planet Earth, but also penetrate the airless void around it.

Space Flight Starts Here

First basic essential in the stupendous task of putting an inhabited vehicle into space is an engine with enough propulsive thrust to drive it up through and beyond the atmosphere on which conventional power plants rely. In essence, this is the same problem that NAA's Rocketdyne Division has already solved in its trail-blazing work for our major missile programs—Atlas, Jupiter, Thor, and Redstone.

Naturally, the performance of these large rocket engines is classified. But this much can be said: rocket engines of the necessary power and efficiency to hurl a heavy payload into an earth-circling orbit have been available from NAA's Rocketdyne Division for several years. But these engines are built for specific defense assignments under the direction of the Armed Services. The nation's military capability wisely has not been diverted to the satellite program, which has been handled as a separate scientific project.

Rocketdyne is already at work on novel propulsion systems even more highly specialized for use in true space. It is to a combination of these with the high-thrust chemical rocket engines already being built in quantity that man can look for a vehicle that will actually navigate in space.



INERTIAL NAVIGATION is the new art of guiding an aircraft to a pinpoint – without the help of stars, radio beams, or radar. NAA's Autonetics Division is a world leader in the development of inertial navigation and other automatic flight control systems.

Man Into Space

At North American's Los Angeles Division, the first flying model of a new kind of craft is being readied for flight test. It is a stub-winged bullet of a machine, with a shape reminiscent of the guided missile configurations that have been illustrated in the press in recent years. But it will carry a man.

This is the X-15, powered by liquid-fuel rocket engines immensely more powerful than any airplane engine of the past. It is designed to carry man faster and higher than he has ever flown before.

One day soon, the first X-15 will thrust off and point its needle-nose toward infinity. Up through fast-thinning atmosphere it will rocket, through the inferno of the heat barrier, into the upper altitudes where an unprotected man would disintegrate, on to the moment of weightlessness, the little-known phenomenon that will tell the pilot he is flying through space.

Other bold new concepts now in development at North American Aviation, Inc., include the YF-108, a long-range interceptor for the Air Force, which is now in the preliminary design phase at the Los Angeles Division; and the carrier-based A3J, first supersonic attack weapon system for the Navy, which is now being built at the Columbus Division.

These are the planes, based on the experience North American has gained in building more supersonic airplanes than all other companies combined, that will set the pattern for tomorrow. For over twenty years North American has proved its ability to meet the nation's air needs – in quantity, on schedule, and at lowest possible cost.

The Age of Automatic Flight

At this very moment, advanced aircraft – both manned and unmanned – are flying at speeds so far beyond what we now call supersonic that they must be controlled almost entirely by automatic electronic systems. In both types, manned and unmanned, the control system is vital to the success of the mission. NAA's Autonetics Division is a world leader in creating these new automatic systems: flight controls, armament controls, inertial navigation, computers, and other complete control systems for the military and industry.

Of even greater significance, however, is the technique Autonetics has developed for *producing them in quantity.* For these airborne systems are so tiny that what would be a trunkful of standard gear must be miniaturized to fit into a cigar box... so rugged that they can perform with pinpoint precision even in the violent phenomena of supersonic flight through air and space... so reliable, as a result of Autonetics' components testing procedures, that a pilot can trust them with his life – and our security. Autonetics is unique in its ability to mass-produce them with complete reliability.

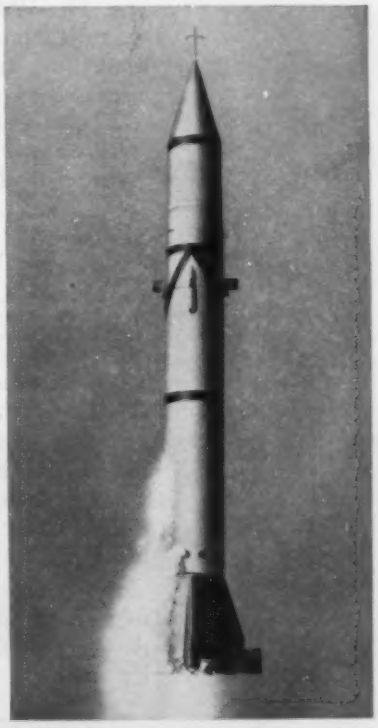
Nuclear Reactors: Power from the Atom

For over ten years the Atomics International Division of North American has been advancing the techniques for deriving practical power from the atom. Two of the most important power concepts under the Atomic Energy Commission's program have been pioneered by the division.

Since last July the Sodium Reactor Experiment in the Santa Susana Mountains near Los Angeles has been supplying electricity on an experimental basis to the homes and factories of the San Fernando Valley. The experiment will supply data for the 75,000 kilowatt station soon to be built for Consumers Public Power District of Nebraska. And on September 17, the Organic Moderated Experiment in Idaho Falls was brought to sustained nuclear fission. It is the basis for two additional proposals for power plants—one in Piqua, Ohio, the other for a Latin American country.

America is sharing the promise of the Peaceful Atom with other lands through AI-built reactors in Japan, Denmark, Germany, and Italy.

Here, in North American, you'll find as potent a combination of scientific, engineering, and production skills as any in American industry. Because the efforts of these men are being spurred by the urgency of national defense, they are constantly forging ahead into new "fields of the future." Much of their work holds immense promise for science and industry.



ROCKET ENGINES – mightiest power packages ever made – are rolling off the production line at NAA's Rocketdyne Division. They launch America's major missiles: Atlas, Thor, Jupiter, Redstone.

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SERVES THE NATION'S INTERESTS FIRST – THROUGH THESE DIVISIONS:

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Los Angeles, Canoga Park, Downey, California; Columbus, Ohio; Neosho, Missouri

FRONT AND CENTER

The Army's Air Defense Command put its first Missile Master system in operation at Fort Meade, Md., as part of the Washington-Baltimore air defense complex. The first full operational electronic air defense control system in the U. S., Missile Master is operated by the 35th Antiaircraft Artillery Brigade. The next Missile Master system to become operational will be in the New York City area.

SCIENCE AIDS ARMY COMBAT METHODS

The first scientific advisory committee at the Army combat level has been formed at the U.S. Continental Army Command's Combat Development Experimentation Center, Fort Ord, Calif.

CDEC, which has the mission of investigating experimentally new organization and tactics for the Army, has pioneered in the combat development field with completely integrated soldier-scientist teams in developing the Army of the future. But to obtain objective scientific advice, Brig. Gen. Frederick W. Gibb, CDEC commander, recently established a committee consisting of David Blackwell of University of California, William Leighton and Kenneth Arrow of Stanford University, Dr. William Shockley of Shockley Semi-Conductor Laboratories, Herbert Weiss of Northrop Aircraft Corp., and James M. Hait, Executive Vice President of the Food Machinery Corporation.

The committee, which will advise CDEC on the quality of the scientific aspects of its work and give objective counsel on its experimentation program, recently spent several days at Fort Ord studying CDEC's program.

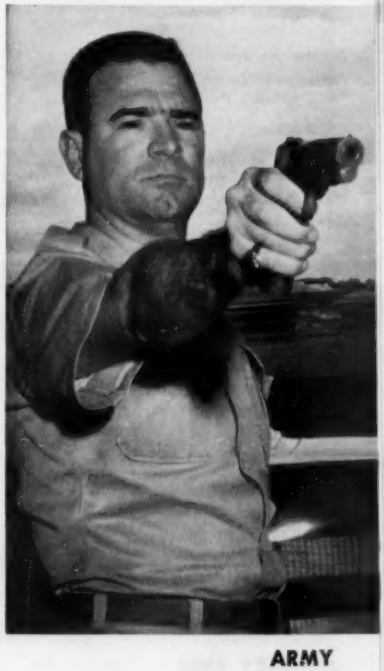
Following the meeting Dr. Shockley, a Nobel prize winner, said CDEC represents a "very important step in utilizing scientific methods in an area that has been regarded as purely military."

While wars must still be fought on the ground, Dr. Shockley said, we cannot rely on a single program.

"There can be no doubt," he said, "that the intercontinental ballistic missile with thermonuclear warhead poses our most important defense problem. But, to concentrate effort exclusively and entirely on this problem would be dangerous and shortsighted."

A balanced defense must include effective ground force operations and here is where CDEC can aid the Army's responsibility in a most effective way, Dr. Shockley said.

Capt. Donald G. Barger, CO, 534th MP Company, Fort Clayton, C.Z., is the top pistol shot of the Military Police Corps. He proved it during the annual MP competition which saw the pistol team from the Lompoc, Calif., branch of the Army Disciplinary Barracks win the 1957 Provost Marshal General's Trophy.



WHERE THE FORCE CUTS WILL BE FELT

Secretary of the Army Brucker has said that no major Army posts will be inactivated in FY 1958, but military populations in CONUS will be reduced by 48,000 in accordance with the DOD manpower cut. In order to retain the broadest possible mobilization base and still stay within the new strength ceiling of 900,000 to be reached by 30 June 1958, training input will be reduced at certain posts, some units transferred, and other units inactivated.

At the same time, Mr. Brucker announced that the

1st Armored Division at Fort Polk, La., will be inactivated and replaced partly by the activation of an armored combat command and training center.

These are the major posts that will be affected (cuts are approximate figures and may be amended before 30 June 1958 if required): Fort Benning, 6,500; Fort Bragg, 4,500; Fort Carson, 4,000; Fort Hood, 2,000; Fort Lewis, 4,500; Fort Riley, 1,000; Fort Sill, 1,500; Fort Gordon, 3,000; Fort Chaffee, 8,000; Fort Devens, 500; Fort Jackson, 6,000; Fort Leonard Wood, 2,500; Fort Ord, 1,500; Fort Polk, 2,500.

In view of the substantial savings to be realized in spaces and funds, an accelerated program to consolidate 15 of the 18 military districts into five U. S. Army Corps (Reserve) within Fourth and Fifth Army areas was recently announced. The program was adopted primarily to effect better command and supervision of Reserve elements.

The 13 military districts in the Fifth Army area will be consolidated into four U. S. Army Corps (Reserve) and two of the five in the Fourth Army area into one Corps. Locations and designations are: VI Corps Headquarters comprising Michigan and Indiana (Fort Benjamin Harrison, Ind.); XI Corps Headquarters comprising Illinois and Missouri (St. Louis, Mo.); XIV Corps Headquarters comprising Wisconsin, Iowa, Minnesota, North and South Dakota (Minneapolis, Minn.); XVI Corps Headquarters comprising Wyoming, Colorado, Nebraska, and Kansas (Omaha, Neb.); and VIII Corps Headquarters comprising Texas and New Mexico (Austin, Tex.).

Plans for consolidating the rest of the military districts in the Fourth Army area and those in First, Third and Sixth Armies are in preparation.

A heavy mortar is fired from an armored personnel carrier at Fort Ord, Calif., where the Army's Combat Development Experimentation Center is seeking to increase the speed, mobility and fire power of Army combat units.

GENERAL OFFICER SHIFTS

Maj. Gen. Frank S. Besson, Jr., to OCOFSA . . . Maj. Gen. Haydon L. Boatner to TPMG . . . Maj. Gen. Derrill M. Daniel to USA Military District, Nebraska . . . Maj. Gen. Francis M. Day to Fort Lawton, Wash. . . . Maj. Gen. Thomas W. Dunn to SHAPE . . . Maj. Gen. Ralph M. Osborne to USAREUR . . . Maj. Gen. Clark L. Ruffner to Fifth Army . . . Maj. Gen. Robert W. Ward to OCA . . . Maj. Gen. Ralph W. Zwicker to XX U. S. Army Corps (Reserve), Fort Hayes, Ohio . . . Brig. Gen. Van H. Bond to ODCSPER . . . Brig. Gen. Ernest F. Easterbrook to Director of Army Aviation . . . Brig. Gen. Frederick W. Ellery to Eighth Army . . . Brig. Gen. Benjamin T. Harris to JAMMAT, Turkey . . . Brig. Gen. Richard H. Harrison to AFSWP . . . Brig. Gen. Gerald C. Kelleher to USATC, Fort Leonard Wood, Mo. . . . Brig. Gen. Andrew T. McAnsh to 101st Airborne Division . . . Brig Gen. George W. Power to USARAD Center . . . Brig. Gen. Richard Steinback to MAAG, West Germany . . . Brig. Gen. Richard J. Werner to Third Army.

Retirements. Maj. Gen. George Honnen . . . Maj. Gen. Frank N. Roberts.

Maj. Gen. Ralph M. Osborne of CONARC headquarters gets the feel of the Army's flying platform, a development by Stanley Hiller, who, with Col. John M. Stark, is looking on.

SPEED UP
THESE TOUGH JOBS

Ingersoll-Rand GR-125 Gyro-Flo Compressor, Continental-powered, operating Mall chain saw cutting 12" x 12" timber to repair pier. Equipment in use on an eastern railroad.

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— POWER SPECIALISTS SINCE 1902 —

THE ARMY'S MONTH

The growing importance of training officers and men in the operation and maintenance of parts and components of guided missiles is apparent in the announcement from Redstone Arsenal that the Ordnance Guided Missile School has added fifty new instructors to its staff at one time. All fifty were added by the Philco Corporation, which is one of the ten industrial corporations that supply 166 civilian instructors to the school. The total faculty is 325. Col. H. S. Newhall is Commandant.

Helicopter pilots in Seventh Army in Germany are being trained in instrument flying by the Seventh Army Aviation Training Center at Stuttgart. This is the first Army installation other than the Army Aviation School to offer courses in blind flying to helicopter pilots.

The Rhine River Patrol, which has been operated by the U. S. Navy since 1949, is in the process of being turned over to the U. S. Army. German Army personnel are being trained to man the fifty-odd patrol craft. The patrol covers 120 miles of the Rhine River international waterway from Lauterburg to Lorch.

The Fourth Annual Military-Industrial Conference will be held at the Conrad Hilton Hotel in Chicago, 17-19 February. Sponsored by numerous business, government, scientific, educational and other organizations, the conference theme this year will be "The Role of Commerce and Industry in U. S. National Strategy." Brig. Gen. Robert E. Wood, Rtd., is program chairman.

Modification of the design of regimental flags and guidons is under way to correspond to the changes in regimental and division structures made by the new Combat Arms Regimental System. Units such as battle groups, battalions, and squadrons will each be authorized a replica of the regimental flag. A small arabic numeral has been added to the replica flags to indicate the relationship of the battle group, battalion or squadron to its regiment. Similarly, an arabic numeral on the guidon will indicate the battle group, battalion or squadron to which the company, battery or troop is assigned.

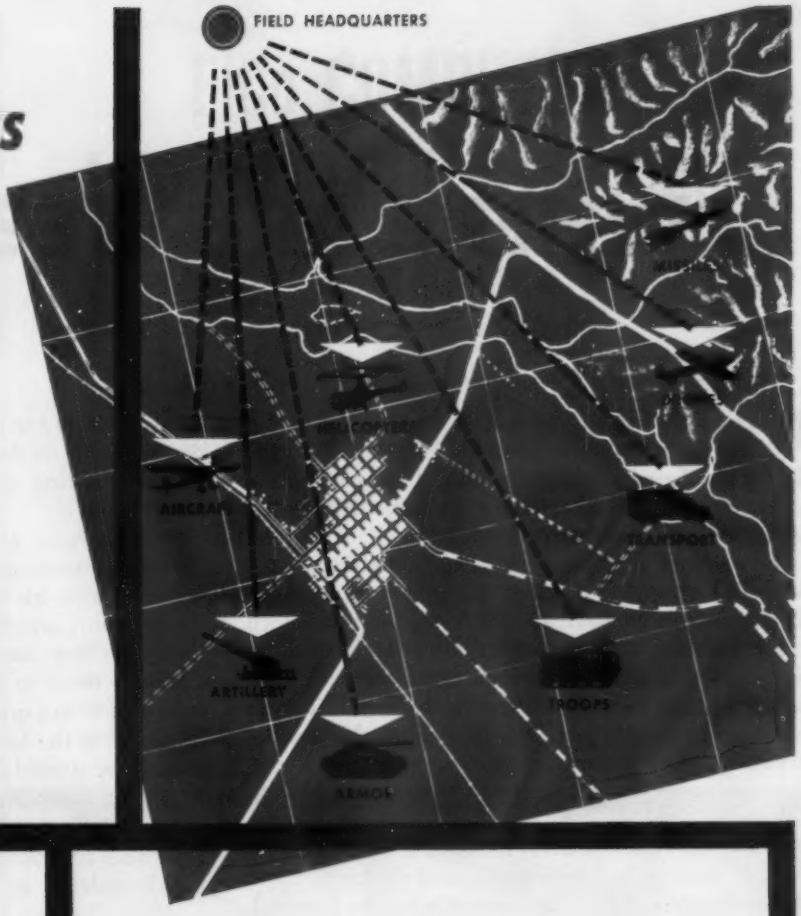
Activation of the 2d Battalion, 333d Artillery, at Fort Sill in February will be the first step in the formation of the Army's third operational Redstone missile group. The first group was formed at Redstone Arsenal in July 1957, the second at Fort Sill on 1 October 1957.

Unless higher authority objects, the Army may begin using the new military pay-voucher system for officers and men next July. Secretary of the Army Brucker approved the system which uses a monthly voucher instead of the present pay record. Approval of the form must be obtained from Defense Department, the General Accounting Office, and Bureau of the Budget.

In response to numerous requests, the Association had the November 1957 cover reprinted on heavy stock suitable for framing. This was the drawing of a combat rifleman by Lieutenant Colonel Lachlan M. Field. Readers desiring one of these should address the Secretary at National Headquarters. The supply is limited.

INSTANTANEOUS

POSITION LOCATION OF ALL FIELD ARMY UNITS



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DECCA NAVIGATION SYSTEM

Bendix-Decca provides the navigation and position location required by army ground and aviation units to carry out the modern tactical concepts of warfare. Position location is instantaneous. Accuracy to within tens of feet is provided at all altitudes (behind hills and obstructions) in all weather, and without revealing the presence of friendly units. The system is a basis for drone or missile guidance, and a key to effective reconnaissance, troop safety and air and ground traffic control.

Bendix-Decca is the low frequency area coverage navigation system, assuring operation beyond line of sight and below the curvature of the earth. The system will incorporate a Pictorial Display which visually traces on standard army maps the instantaneous location and course of fixed wing aircraft, helicopters, ground vehicles, and troops. This information can automatically be made available at command locations or field headquarters.

Army personnel are invited to write for the booklet "Precise Position Information for a Future Field Army."

Bendix
PACIFIC DIVISION
Bendix Aviation Corporation
NORTH HOLLYWOOD, CALIF.

WHERE ARE WE?

UNTIL the President delivers his State of the Union message early in January and follows with the 1959 budget in the middle of the month, the impact on the Administration of the orbiting Sputniki will not be measurable to any degree of accuracy.

Some interim announcements can be expected that will give a boost to our long and intermediate range ballistic missile programs and the Army's effort to launch a space satellite with its three-stage Jupiter C missile. It is possible that action on these problems may have been delayed by the NATO conference in Paris which was attended by Secretary of Defense Neil H. McElroy as well as by the President.

The range of the inquiry

UNTIL the Administration speaks, the only authoritative voices to be heard are those of the civilian and military leaders who testified before the Senate Preparedness Subcommittee. The study of the transcript of these hearings indicates that the Senators are aware that they should look into all aspects of our defense posture and not focus solely on the spectacular. While answers to the question of how we are going to catch up with the Russians in space satellites and long range and intermediate ballistic missiles are certainly an important part of the task, other less glamorous elements are also essential.

Another high priority requirement is to get as clear and full a picture as possible of Soviet scientific and military capabilities, present and potential. The Sputniki attest to Soviet progress in space flight and suggest advanced progress in ballistic missiles. The Russian assertion that it has tested an ICBM is generally accepted as factual. The modernization of the Soviet Navy is also well documented and so too is the modernization of the Soviet Army, although up to now less attention has been given to this than it deserves.

Secretary of the Army Brucker placed this in its proper perspective in a few paragraphs of his opening statement to the Preparedness Subcommittee *(see box, pages 66-67)*.

(Two articles in this issue add to our knowledge of the capabilities of today's Soviet Army. One is Raymond L. Garthoff's examination of the doctrines of the Soviet Army *[page 51]* and the other is Mark S. Watson's report *[page 57]* on the modern weapons the Soviet Army displayed during its annual parade in Moscow on 7 November.)

Another Army witness, General Gavin, emphasized the recent modernization of the Soviet Army, and stated that in his opinion Soviet Army leaders had the capability and the "versatility" to apply power "in their own way, on their own initiative and in such a way as never to give us a black and white issue."

In answer to a question by Senator Lyndon Johnson, he said: "In the broad spectrum and considering how it could be applied I would say we are" behind Russia in military capability at the moment.

General Taylor emphasized that the Army should have what he described as "an unconventional-conventional capability, an unatomic-atomic capability."

Mobility in missiles

He also stressed the need for mobility in missiles. This he said is "instinctive" with the Army. "All our equipment is mobile and we are not interested in equipment that cannot be moved from place to place. We have actually packaged the Redstone on this basis and the Jupiter offers no greater problem in giving mobility to it. . . . I mean breaking it down into loads and hauling it to most places. There are degrees of mobility in all things, but it is highly important, in my judgment, to be able to deploy these weapons in remote places where they can be protected and also where they will not draw fire on cities and important installations."

General Taylor said he had estimated that it would cost "over $400 million for new equipment in our Pentomic divisions. This would include some items in the missile field."

General Gavin also stressed the need for mobility:

"In combat one soon learns that people who hole up in big concrete facilities don't live long. . . .

"Once you pin yourself down to a hole in the ground and pull the hole back in on top of you, your days are through. You have got to move to survive and we think this is true of ballistic missiles as well as anything else."

(Continued on page 66)

FICo engineers and produces the guidance for the Redstone Missile.
U.S. Army Photo

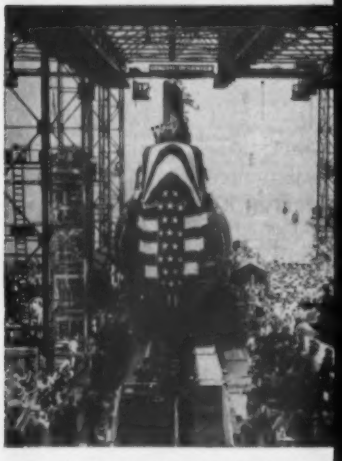
FICo COMPUTER AND CONTROL SYSTEMS

- **For Weapons Control**
- **For Processing of Data**
- **For Special Purpose Computer and Control Applications**

Ford Instrument Company develops and produces the most modern of special purpose computer and control systems—for missile, airborne, shipborne, land-based, and nuclear applications—for *government and industry.*

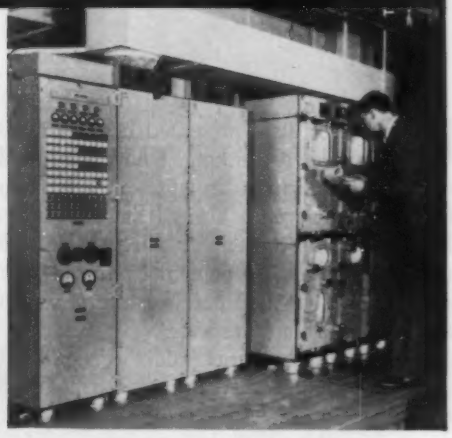
FICo is one of the foremost organizations in the United States working in the field of automatic control. Hundreds of engineers and extended precision mass production facilities enable FICo to handle complete systems contracts from start to finish.

FICo navigational equipment goes into a wide range of aircraft.
U.S. Air Force Photo



FICo controls are used in the atomic submarine program. FICo is also working toward development of the closed-cycle gas-cooled reactor.
U.S. Navy Photo

FICo research and design led to improved safety and arming device for Army atomic cannon.
U.S. Army Photo



FICo analog and digital computers can be readily developed and produced—using modular techniques—for special purpose applications.

FICo launching and control order computers are used for Navy A-A missiles.—*U.S. Navy Photo*

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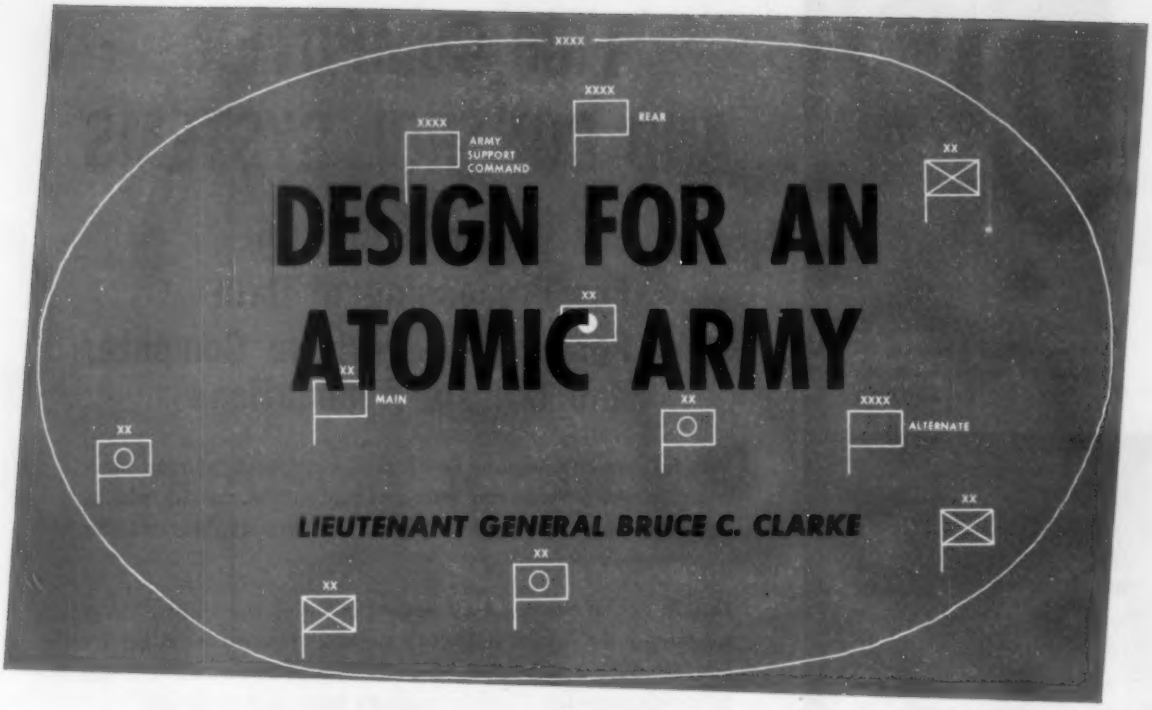

IN order that ideas presented here should not merely reflect my own thinking, I have consulted, by questionnaire, more than fifty present and former key officers of the Seventh United States Army, more than half of whom are general officers. While this article, therefore, presents a general consensus of thinking, I should point out that there was a very wide divergence of opinion in many respects.

I like to think of this article as a guide for a group of staff officers directed to design a field army to fight an atomic war in the North Temperate Zone. In so doing, I would expect them to scrutinize fully the concepts presented, as well as others the staff might have, and would expect that this very general directive would serve to stimulate them to come up with the optimum organization for a field army to be employed in the time-frame of 1965-70. I would hasten to point out that it must be based upon equipment that will be in the hands of troops at that time, but be capable of changing as new equipment is produced.

Command and staff

The command structure. The number of command echelons in the field army should be further reduced, and to do so, the corps headquarters would be eliminated. Thus, the command chain in the field army would be field army-division-battle group-company.

It is imperative that the army headquarters be capable of being divided habitually into a MAIN and an ALTERNATE, for the conduct of operations and provide a REAR echelon as well. This does not mean that the overall headquarters should be enlarged, but it does set the stage for two operating headquarters always ready to function. The army commander should normally be at MAIN or should operate from it, while his Deputy Army Commander should operate from ALTERNATE. The latter should be a three-star officer and thus the Army Commander should be able to use the ALTERNATE as a separate command headquarters to take over a two-or-more-divisions effort and control it for a limited time for special purposes such as in the exploitation.

The staff concept. Every effort should be made to reduce command and staff inertia. This can be done in many ways, but probably the best is by developing a proper frame of mind in the army staff. It must have the ability to prepare directives which do only three things:

- ¶ Say what is to be accomplished.
- ¶ Give necessary limiting and coordinating considerations.
- ¶ Say what help can be expected.

In addition, principal staff officers must take final ac-

Sequence of a typical photo reconnaissance mission with the Radioplane SD-1 drone

Eye in the Sky

SITUATION: *A range of hills screens enemy activities.*

TACTICAL PROBLEM: *What is on the other side of the hills?*

SOLUTION: *Aerial drone surveillance – puts an "eye" in the sky.*

Radioplane, in conjunction with the U.S. Army Signal Corps, developed and is producing the SD-1 surveillance drone system. Highly mobile, the camera-carrying SD-1 may be zero-length ground launched in rough terrain from a camouflaged position and flown by remote control over enemy installations on photo reconnaissance missions. After the drone's camera has exposed its film by radio command over the target, the SD-1 is then flown to a pre-designated area for parachute recovery. The camera is removed, the film is processed, and prints are delivered to the requesting unit within minutes after the entire operation began and the mission is accomplished without risking a pilot's life or a large man-carrying aircraft.

The Signal Corps SD-1 surveillance drone system is another example of Radioplane's constant refinement of the art of producing radio-controlled drones. First to manufacture target drones exclusively for military use Radioplane has a world-wide field support organization with personnel qualified to assist in all phases of drone field activities.

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tion on matters that fall within established policy.

The army should have a Chief of Staff. The Deputy Chief of Staff for Administration during operations would be at, and control, army REAR which would control the army administration well in the rear.

The normal G1, G2, G3 and G4 staff setup should be retained; each should be headed by a brigadier general. A Deputy Chief of Staff for Operations is not essential and serves to slow down command and staff action.

The staff must include representation from all technical and administrative services. None of the staff officers should be commanders. Hence, the staff and the army headquarters can be kept small. There would be separate headquarters directly under the army commander to control each of artillery, aviation, antiaircraft, engineer and signal operational troops. Such headquarters would be well removed from the army command posts.

The logistics support operations of the army echelon would be under an Army Support Command headed by a major general. This command would be concerned with supply, storage, maintenance, evacuation, rehabilitation, special service, transportation, replacement, military police and finance matters.

Tactical units

Number of divisions. The number of divisions in the field army should normally be about six. Generally, they would be initially positioned with four in contact with the enemy, one in an intermediate reserve location, and one farther to the rear providing rear area security while it is undergoing rehabilitation. It is also in a reserve status. Five divisions in contact with the enemy would be expected to result early.

The divisions should be about half infantry-heavy and about half tank-heavy. This ratio may vary with conditions.

I would not expect the field army to have an airborne unit in it habitually, but it would be capable of handling such a unit if made available to it for a particular operation.

A much larger field army than this would be uneconomical, difficult to control, unresponsive to meet emergencies, and too cumbersome in a fast-moving situation. There would be a tendency in a larger field army for concentrations which would be fatal in the atomic age.

I would expect such a field army to total about 200,000 officers and men, and to have to occupy an area up to 100 miles wide and 200 miles deep.

The artillery setup. The artillery commander should be a fire support commander with a headquarters roughly equivalent to a modified Corps Artillery Headquarters. The commander should be of sufficient stature to have control over all firepower, air and atomic, within guidance, sometimes detailed, from the field army commander. A small artillery section would be a part of the army commander's staff.

★ ★ ★

Lieutenant General Bruce C. Clarke was credited by General Patton as a member of that brilliant group of commanders of Third Army combat commands that reflected his own lust for battle and translated his bold plans into performance. An engineer who got into armor during the Second World War, General Clarke is a member of the USMA class of 1925, and earned a degree in Civil Engineering at Cornell University in 1927. During the Korean conflict he commanded a corps and later became Commanding General, U. S. Army Forces, Pacific. From that assignment he was posted to the command of the U. S. Seventh Army in Germany. Under his direction Seventh Army became the first U. S. field army to reorganize for atomic war.

★ ★ ★

The artillery above the division level should consist primarily of missile units, but there should also still be a pool of conventional artillery to allocate to divisions in either an attached or supporting role to augment divisional artillery against enemy in close contact.

The atomic delivery component. Medium weight, medium range (200 miles) missiles should be in army and controlled by the army artillery commander. The army commander should exercise control by allocation to divisions and to artillery commander for employment in specific sectors. Long-range, megaton weapons should not be in the field army.

The antiaircraft component. There should be sufficient NIKE and HAWK missiles to protect the Army area under a commander directly subordinate to the field army commander.

The armored cavalry component. There should be four or five armored cavalry regiments in the field army. They would be used to cover flanks, fill gaps, do screening and surveillance, provide security, help provide target acquisition, act as reserves, and perform other missions as required. They would operate under

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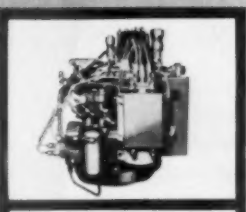
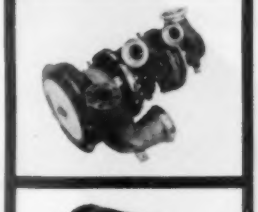
Auxiliary Power Systems

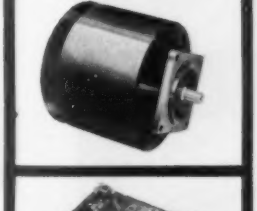


Liquid and Solid Propellant Gas Generators

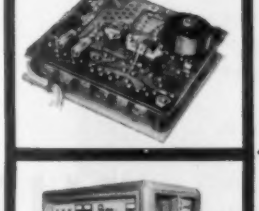
Turbines, Pumps, Gearboxes, Controls



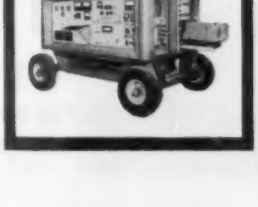
Brushless Alternators



Electrical Components



Ground Support Equipment



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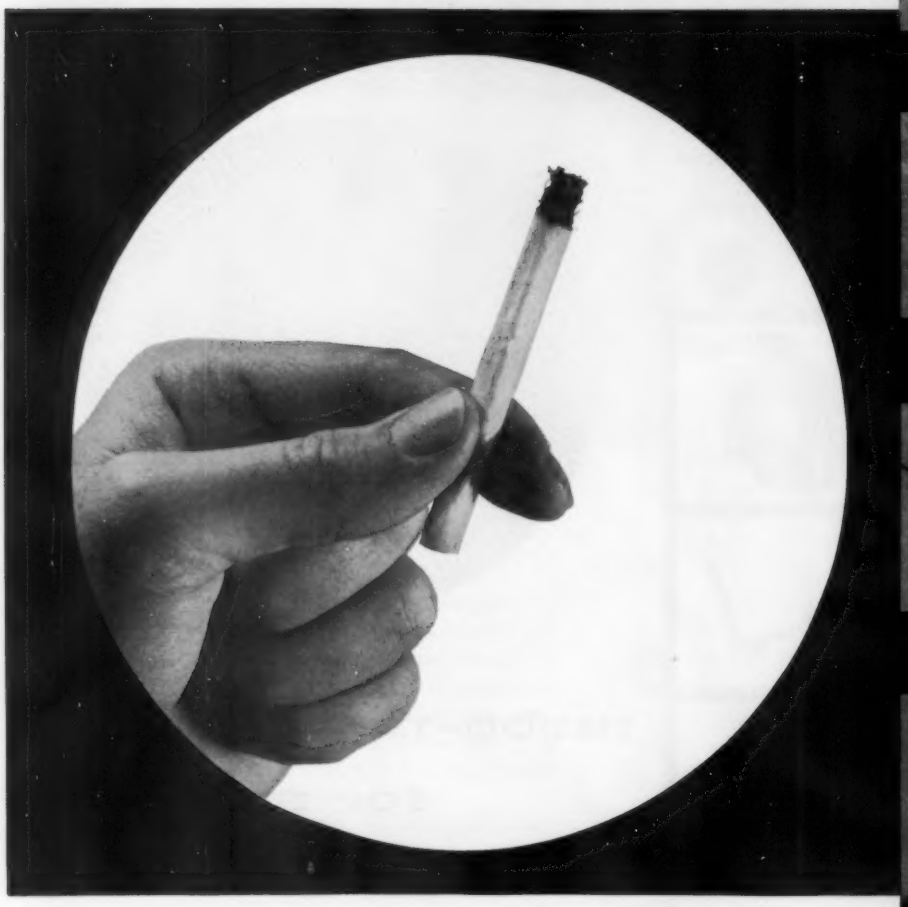

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army or be attached to divisions as required. These economical units would serve to give cohesion to the whole field army combat area.

Combat support units

The engineer component. Engineer needs and operations increase as size and power of matériel increase. The engineers will be called on to maintain roads, clear debris, aid evacuation, build airstrips, bridge streams, construct barriers, and perform other missions. Engineer units may have to provide security for their own operations.

The signal component. Land lines should be replaced to the maximum extent practicable. No reliance should be placed on commercial circuits in the forward area. The signal service should be able to provide the control necessary for an increased army aircraft component. A master grid signal system is indicated for the army area.

In addition to communications, the signal component should provide the field army above division level with the capability for positive and reliable target acquisition, with effective electronic warfare, and with navigation and air traffic control.

Medical resources and organization. Due to the dispersal inherent in the tactical concept, medical evacuation must be accomplished by air from the division area. Adequate air evacuation will increase the mobility of the most forward medical units by reducing their size and permit centralization of critical medical professional personnel in rear areas.

A mobile, dispersable, multipurpose hospital unit capable of breaking down into smaller functional components will be necessary. This hospital or its elements will be able to provide forward surgical care with augmentation by cellular medical professional teams and routine medical care in any portion of the field army area.

Medical supplies must be pre-packed and readily available to the army area for air and surface delivery.

Chemical support. An offensive and defensive capability must be retained. Units must have decontamination equipment within the unit and be trained in its use. Chemical service will be chiefly one of supply under the army support command. Maintenance should be by replacement, not performed in army.

There must be an expanded radiological monitoring capability. Both friendly and enemy fall-out must be traced and measured. The entire program should be developed and disseminated by the Chemical Corps.

Military Police service. The increased distances, both laterally and in depth, will require more extensive military police service. This will require additional MP units operating behind the divisions on an area basis.

Maintenance support. We must provide high-quality, simplified field maintenance at the most forward possible echelon with a minimum expenditure of personnel and logistic support effort. Maintenance support must be simple, flexible, highly mobile, adaptable to all terrain and climatic conditions, and provide highly reliable results. Equipment must be compact, lightweight and reliable and rugged. Third echelon maintenance will be organic to using units. Higher echelon maintenance will be performed by army support com-

A Seventh Army M-48 tank fires a 90mm round during a night exercise at Baumholder, Germany

Deliberate Planning . . . Violent Execution

The training philosophy of the U. S. Seventh Army is expressed in this directive issued by the Commanding General on 3 September 1957:

1. The training philosophy applicable in Seventh Army tactical units is aimed at the attaining and maintaining of a peak level of combat readiness. This can be achieved only through careful analysis of individual and unit weaknesses, establishment of high training goals, and continuing effort to reach goals set.

2. Training, regardless of size of unit, has but one purpose, that is, to teach effectively the techniques of combat. The *attack* is the key to success; the defense is merely a temporary expedient to converge forces for an attack elsewhere or to prepare for an attack at a future date.

3. The consequences of having an attack grind to a halt are great. The effort required for it to bounce back is tremendous. Once an attack is launched, its momentum must be maintained until the objective is seized and secured. Battle losses received due to poor planning and faulty execution are inexcusable and will result in loss of respect for and confidence in the commander. The best reputation a commander can have is that he accomplishes his missions with few losses.

4. The end sought in planning and executing an attack is brought about by *deliberate planning and violent execution*. The opposite is fatal. *Speed in* planning is often needed, but *haste* should be avoided. Remember that in combat there is no second opportunity and seldom opportunity for rehearsals.

mand or some agency farther to the rear.

Direct support units will provide third echelon maintenance consisting of "modular replacement" and technical assistance to the using units. Items requiring repairs beyond the limitations of direct support units would be evacuated to army REAR for higher echelon repairs.

Our approach must be based on modular design concepts wherein the greatest possible number of items are designed in separate modules which can be easily replaced with a minimum amount of simple tools in a short period of time. These modules may be self-contained units that are evacuated either to the rear of the combat zone or to the ZI for repair.

Army Aviation. Sufficient aviation to fill requirements should continue to be organic to major units throughout the field army. The aviation staff section of the army headquarters should be retained. The increase in aviation in the field army requires an appropriate headquarters directly subordinate to the army commander.

Air Force support. We should count on little from the Air Force except incidental reconnaissance (armed and unarmed), leaving the Air Force primarily to "counter-air" and "massive retaliation" roles.

Transportation and supply

Transportation means, organization and control. Most of the transportation capability in the field army probably will be in the form of truck or highway transportation. Occasionally a field army will have a rail capability, but this will be only because the rail lines and equipment happen to be in the area where it is located. The field army will not have rail units in it.

In the field army, there will continue to be enough conventional transportation to move the required supplies to the divisions. While it is highly desirable that this transportation be capable of moving across country without a need for roads, this is not at all probable. Most of our tonnage will have to be moved by conventional means. Although divisions will have a certain capability for movement, they will not be able to move all of their required tonnages. The nondivisional transportation to provide this support should be organized much the same at it is now—i.e., formed into companies, battalions and groups.

Although a greater emphasis will be placed on air movements, this form of transportation will not be in sufficient quantity to provide all the tonnage required. Routine resupply will not be airlifted. High-priority and critical items, emergency resupply and troop lift will be airlifted. The pooling of transportation will be the general policy.

Supply operation. The need for dispersal will dictate that all army depots be "general" supply points with only a few days of supply stored at each point. As supply is needed, these small general resupply points will be reduced to zero balance and then re-established. Transportation units within the field army area will probably continue to operate in the same general sector, reducing some of the small general supply points to zero stocks, then moving on to others while those so reduced are being reconstituted.

Other considerations. Troops should be paid only when sent to the REAR—either by unit or as individuals. Cigarettes, candies, "comfort items" must be provided automatically on a free issue basis. Money payments—even in REAR—should be small, with most of a soldier's pay being allotted, or held for benefit of himself or survivors. There are going to be few consumer goods in any theater in an atomic war.

Conclusion

You have detected that there are a lot of questions left unanswered. You have noted a studied vagueness in some fields. If I were to issue such a guide, I would expect to receive at once and continually many questions, and over the period of the staff action would expect to consider many and varied solutions to each of the problems. When the staff action was completed and approved, I would expect to see more modifications and changes indicated as the result of service tests. Anyone privileged to be connected with such a project should be prepared to see his initial concepts develop and change by such a process of evolution.

IN PRAISE OF basic training instructors

A product of a too-often maligned system casts a vigorous vote of confidence

SPECIALIST JOHN R. ROBERSON

I FEEL that I am something of a connoisseur of instructors and instruction. Something like double the normal number of teachers has passed before my student desk in this country and in Europe, offering in various languages to impart their knowledge to me. Some have been excellent, some pitiable. Hence I feel that I am better qualified than most to pass judgment on the instruction I received in the eight weeks of basic combat infantry training I completed in the United States Army.

I approached the Army with considerable apprehension. I had heard stories of superannuated noncoms handed lesson plans and assigned to lecture on subjects about which they knew nothing—mess sergeants discussing ballistics, mechanics discussing infantry squad tactics. I had heard how they had memorized their material to such an extent that a question from an eager student was unthinkable, since any interruption of their spiels would force them to return to the beginning of a section and start over (like the aged custodians of some of our national historical shrines). Furthermore, so the stories went, trainees must answer questions from these instructors in exactly the words handed down from on high in the class outlines or be counted wrong. As you can see I was prepared for the worst.

What I actually found in the division to which I was assigned for basic was a splendid training faculty. The instructors, almost without exception, were interested in their subjects and in their students, enthusiastic in their presentation, and imaginative in their classroom technique. We, the members of Charlie Company, composed a far from model class. We were frequently nearly asleep on our feet as the result of strenuous physical exercise and long hours of night training. At least half of us were draftees, often sub-

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Specialist Third Class John R. Roberson took his basic training in the 501st Airborne Infantry, 101st Airborne Division, at Fort Jackson. A 1950 graduate of the University of Virginia with a B.A. in Foreign Affairs, he also holds an M.A. in English from the same institution, Certificates of French Studies, First and Second Degrees, from the University of Grenoble in France, and he studied Chinese-Mandarin for a year at the Army Language School. He served in Tokyo for seven months and is now with a U. S. Army Security Agency Field Station.

consciously or openly hostile to anything the Army had to offer. We ranged in age from barely seventeen on up. Some of us had the equivalent of a fourth grade education, and some of us had considerably more. (The Army gives special pre-basic classes to those trainees whose test scores indicate less than fourth grade achievement.) Despite all these handicaps, any one of which might cause a teacher to give up in despair, our faculty was undaunted. When the day came for us to review what we had learned in our eight weeks, I found that they had been remarkably effective in getting through to their students. My comrades in arms, even the ones I was sure had slept through every class, showed that they had taken in and retained the information presented to them, to a surprising degree.

Instructors with firm convictions

Our instructors were as varied a group as we were. Some were privates E-2, some first lieutenants; some were veterans of the Second World War, and some merely serving a two-year tour of duty. But all were held together by a firm conviction that should we ever be sent into combat, the lessons they had to teach us could save our lives. They knew the number of casualties that occurred in Korea and before, purely because of lack of training. And so they were interested in us, their students, in a very vital way.

These men were also interested in their subject matter. They had a prescribed lesson plan for each class, but that plan was only a point of departure for them. As they began, for instance, to extol the virtues of the M1 rifle or the handie-talkie radio, they waxed eloquent indeed, with an eloquence that was all of their own making. There was even a friendly rivalry between rifle instructors and the carbine instructors as to which was the better weapon to carry in combat. As is the case with any teaching, their interest was contagious. We saw their interest and their obvious sincerity and we got interested too—so interested that a tall lanky city boy, who had never fired a rifle in his life, listened to what the rifle instructors had to say, made expert and tied for third highest marksmanship score in the company.

Our teachers were enthusiastic. They were convinced that the United States Army has the best weapons, equipment, tactics, and the best strategists in the world. When explaining some particularly ingenious device, like a fuze for a land mine, their admiration for its cleverness was plain to see. Their enthusiasm was the chief factor in reaching the draftees. When the unwilling soldier realized that here was a man like himself, serving his two years by teaching a class, and getting a genuine kick out of it, he must have stopped to think that there is a happier approach to military service than rebellion.

Some of the faculty who had been teaching the same subject for a time had used a great deal of imagination in working out effective methods of presentation. Our class on camouflage, cover and concealment stands out particularly in my mind. Charlie Company arrived at the class and took seats facing down a lightly wooded hill. There was no one in sight. Presently an obviously embarrassed private came before us and began to explain that for some unknown reason the principal instructor of the class had not yet arrived, but that if we would just sit patiently . . . At this point he was interrupted by a brusque lieutenant, who announced that he was the inspector come to inspect the class. (We had heard much about the inspector, who seemed to be a sort of superintendent of schools likely to drop in at any moment, but we had never seen him.) The private explained the situation again.

"Do you mean to tell me," the inspector asked, "that I have come to inspect this class, and there is no class for me to inspect?"

"Yes, sir."

By this time we were all thoroughly awake. Here was a crisis of the first order—an instructor in dire peril of a court-martial—the whole inside workings of the Army machine laid open to us.

"Are you one of the assistant instructors?" the inspector went on.

"Yes, sir."

"You must have heard this subject presented a number of times. Could you present it this morning?"

"Well, I suppose I could, sir."

"Good. Go ahead."

So the private began. The fun had just started. As he described each method of camouflage, a figure previously quite invisible would pop up from the landscape before us. One of them turned out to be a sergeant clad in the most tatterdemalion pair of fatigues we had ever seen. He entered into an animated and most disrespectful conversation with the inspector on the subject of his right to wear such ragged attire. After a comical argument, it developed that the "inspector" was the long-lost principal instructor of the class.

The quality of humor

To combat our sleepiness, the faculty used a number of tactics, some of them reminiscent of early New England church services. While the instructor lectured, his assistants would pace up and down the classroom aisles, using shakes, kicks on the desks, and even shouts to wake up the sleepers. An effective technique was that of sending the sleepers to the rear to stand through the class, although as I have said, we were often at the stage where we could sleep standing.

Pedagogical devices popular for holding interest in civilian classrooms were also in evidence. The instructors made frequent use of jokes, relevant if possible, but interesting to the service man in any case. They also used questions and answers, although to a somewhat limited extent because of the size of the classes. The instructor would ask a question, and then make a great show of looking over the nearly two hundred names on the company roster before choosing one man to call on. In the suspenseful moments of waiting, most

of the class would wake up, and better yet, try to think of the answer.

The faculty met the problem of the varying levels of intelligence and education in the company, perhaps the most difficult of all, in a straightforward and successful way. First, they were careful to say everything in the simplest, most direct way possible. To do so required considerable skill, since a long rambling sentence is much easier to frame than a short concise one. The result was lectures which were clear to the slowest pupils, and still not boring to the quicker ones. Second, they repeated each major point that they made very slowly, and then had the whole class repeat certain key words in unison. This served to impress the point on our minds. Third, where the subject was a practical rather than an abstract one, they followed the lecture by a period of practical work on the subject under the supervision of assistant instructors.

A few descriptions of individual instructors may illustrate my points. First, there was our safety instructor, a young private who won our esteem at once when he let us take off our fatigue jackets in the September heat. We saw his real worth, though, only at the very end of our training. His final class was on highway safety, for our guidance on our fourteen-day leaves. He was in charge of receiving all the reports of traffic accidents involving post personnel. He told us simply that he had approached this particular lecture like any other, but that after he had read the accident reports for a few weeks, he saw it in a new light. He revised the lesson plan, and worked over the whole class. The result was well worth his effort, for he produced a masterpiece of quiet and earnest eloquence that penetrated the hard shell of many a young hot rod and left him soberly thinking.

There was our dismounted drill instructor. He explained to us not just the proper methods of executing an about face and a column left, but also the reason for drill at all in the modern army. His often-repeated words fixed themselves in the memory of us all: "A good soldier must possess snap and precision. A unit which has snap and precision develops unit *esprit de corps*." Then he went on to explain how drilling develops discipline and the instantaneous response to commands which a fighting team must have to win a battle.

The chaplain was charged with giving us our character guidance lectures. He knew that for some soldiers the very fact that he was a chaplain created a barrier. They would say to themselves, "Here's a holy joe. I know what he's going to say. Same old stuff, 'Be good boys.'" Consequently, instead of plunging right into the excellent advice that constituted the meat of his lecture, he would spend a few minutes just chatting informally about various subjects in which we were interested—sports, food, sleep, families at home. After he had won his audience, he would move on to his subject. This technique had the additional advantage of causing some men to want to hear him again on Sunday mornings.

These are three of the faculty. I would give each a cluster of stars in my educational *Guide Bleu*. I haven't sampled the product of other regiments in other army installations yet. What I have seen so far, though, makes me think that I will learn in their classes too. That is high praise.

CHECK YOUR M FACTOR

MASTER SERGEANT FORREST K. KLEINMAN

THERE is an "M factor" in the leadership evaluation of every officer and noncommissioned officer that does not appear on the efficiency report form; yet it bears directly upon every rating we get.

Here is a questionnaire intended to help you assess the present status of *your* M factor. For valid results, you must make your decision immediately after reading each description and check either YES or No before going on to the next. Now pick up your pencil and indicate whether or not you believe each phrase truthfully describes the *group of men* you now command or personally supervise.

Marking time until retirement or release from active duty ☐ Yes ☐ No

Resentful of orders ☐ Yes ☐ No

Disloyal to superiors and to one another ☐ Yes ☐ No

Do only what they are ordered to do ☐ Yes ☐ No

Professionally incompetent ☐ Yes ☐ No

Unable or unwilling to improve their performance ☐ Yes ☐ No

More interested in personal affairs than in accomplishing mission ☐ Yes ☐ No

If you answered Yes *even once*, the M factor in evaluating your leadership indicates a need for self-improvement. If all your answers were Yes, then a searching self-appraisal is very definitely in order.

The M factor is the *mirror* provided by our men. What we see in them is the reflection of our own leadership. Aside from the human tendency to blame others for our own shortcomings, it is a time-tested axiom that the motivation, morale and performance of any military unit accurately mirror the leadership of its commander.

As Napoleon said, "There are no bad units—only bad leaders."

Master Sergeant Forrest K. Kleinman, who has contributed five other articles to *Army*, is on duty in the Information Office of Continental Army Command. His last article was "Our Semantic Snafu," in the August issue.

Built-in Supply for the Infantryman

The horse cavalryman had his saddle bags, the armored cavalryman can use his tank as a beast of burden. But what has the Pentomic foot soldier, cut off from his sources of supply?

COLONEL ORVILLE Z. TYLER, JR.

THE tacticians have propounded a problem for the logisticians to solve. Put in its simplest terms, the riddle is this: How do you supply units disposed throughout the unprecedented distances of the atomic battlefield, and how do you keep them supplied? This puzzle is compounded by the need for rapid concentration in the attack, coupled with subsequent spreading out again to avoid presenting a favorable target for enemy nuclear weapons. The planners have given us greater foxhole strength, but fewer supporting troops in the division. Our newest weapons, with fantastically rapid and lethal rates of fire, also expend mountainous quantities of ammunition at frightening speed. Rapid movement means more fuel for planes and trucks.

Here at The Infantry School, where it is our business to keep our feet on the ground, we are studying this problem. The cutting edge of our Army —the infantry—must be brought to bear with adequate force behind it. The increased foxhole strength could become Kipling's "thin red line of 'eroes" without proper logistical support. Rightly, the composition of a division organization must rest solidly on the supported infantry soldier. An organization which is light in logistical support within itself must presuppose that back-up will be furnished from somewhere else. Resupply by air is satisfactory only when it is in being and failure-proof.

Colonel Orville Z. Tyler, Jr., *Infantry,* a 1931 West Point graduate, was a battalion commander, a regimental exec, and G4 of the 77th Infantry Division in World War II. He has been an instructor at Leavenworth, and is now Chief of Staff, U. S. Army Infantry Center, Fort Benning, Georgia.

The air Line of Communications

Naturally, the answer to the expanded distances of the atomic battlefield is supply by air. But one has only to wait for hours on flyable weather or remember the fearful days of the Battle of the Bulge to have grim doubts about this method. True, we have made great progress in aerial delivery and in heavy-drop techniques by parachute. Our planes have been improved, to increase the chances of airlanded troops and supplies. Our ability in short field landings and take-offs is much improved. The VTOL plane and even the convertiplane will be available in the not too distant future. It is not inconceivable that supplies may soon be dropped in maple-leaf-like pods, or fired into the battle-group position by rocket or missile. However, all these things are more or less in the future. We infantrymen want to know what are we going to do now. This is an interim period. We must bridge the gap between the present and the age of the air LOC.

Dispersed depots

Dispersion on the atomic battlefield will have its parallel in the rear areas. Guided missiles and nuclear warheads will require multiple, dispersed depots. All this means increased distances between supplies and the supplied. Greater distances establish requirements for improved communications, for greater speed and better supply control. Electronic machines will process, transmit and record supply data, improving accuracy and time lag. Depot stockage will concentrate on most-used items, thereby saving tons of cargo space. Store-to-door (that is, unit) delivery of supplies from the depots, has been promised instead of the old (supply point) "Piggly Wiggly" distribution where units had to fetch their own. Multiple and widely separated depots are expensive and difficult to control. This system takes

more men and units, not less. More skilled operators are required for complex electronic machines and communications. And we have not yet solved the problem of distance.

Precedents

Where can we look for precedents in solving our problem of an interim logistical system? The cavalryman carried a built-in supply with him in his saddle bags. He also had mobile support from his supply train which followed him closely. This same built-in supply is characteristic of armored divisions.

Consequently, some form of built-in supply must be a feature of any fast-moving, far-moving unit. Especially is this true when you expect of the unit independent operation for two- and three-day periods. This built-in supply capability, then, must be incorporated into our division despite the desirability of holding down weight in order to facilitate air-transportability. In isolated islands of resistance we will live off our fat, like the cavalryman or the hibernating bear.

Another precedent might be the Red Ball Express of World War II. When it was necessary to move large quantities of supplies great distances in support of our fast-moving armored forces, this system of truck-trains was organized. Moving with scheduled precision, these trains delivered the goods. So, in the wide reaches of the nuclear battleground, flying columns of lightly armored vehicles will ply between depots and battle positions. Moving along air and motor patrolled routes to minimize sabotage and infiltration, these armed and escorted trains will deliver the supplies.

Built-in supply

The soldier has long carried his combat supply on his person. Time and modern development have brought little lightening of the 45-pound load. Both combat pack and roll will have to be with the soldier within the perimeter of the battle position. He must have his fat with him. Better mechanics, more highly skilled specialists, will have to be in the unit to make spot repairs in the normally isolated situations. The alternative is cannibalization or black-box replacement (substitution of complete parts, like an entire radio receiver, on the spot). Both of these will be used, in all probability.

Each vehicle, each self-propelled weapon, must have its roll of supply fat on which to live. Non-flammable rubber gas tanks will be the rule. Commanders will live daily with supply economy—"trust in God and keep your powder dry." "Don't fire until you see the whites of their eyes."

Greater dispersion and the necessity for rapid concentration demand more specialized equipment, more highly skilled supply specialists, in the division as well as in the rear areas. Smaller fighting divisions really mean larger logistical back-up, in depots, vehicles and specialists. In the interim period, until our air line of communications is a reality, a thing in being, we must have units with built-in supply, capable of fighting for several days at a time without resupply. These units must be supplied by flying columns of lightly armored vehicles which ply between multiple, dispersed depots in the rear and the battle positions. Impetus of supply must, at long last, actually be from the rear. The whole widely scattered system must be tied together and controlled by modern communications and electronic equipment. In terms of our national resources, logistics on the atomic battlefield will be expensive in men, machines and money; in substance, science and skills. To make the cutting edge bite clean, we cannot furnish less than what is needed.

DATA FOR DECISION

The job of engineer intelligence is to help the commander know "where, when and how to go"

HERBERT L. SMITH

IT is nearly sunrise. Lanterns flicker and burn low in the early Massachusetts dawn. Suppressed urgency tenses the officers huddled about the lanterns. American troops are preparing for what is to be the first major military engagement of the Revolution—Bunker Hill.

One of the officers is Colonel Richard Gridley, Chief Engineer of the new Continental Army. A retired British officer, recalled to service by his friend and fellow engineer, George Washington, Gridley is charged with planning and supervising the erection of fortifications. As he directs the layout of the defense lines, America's first Chief Engineer is unknowingly blazing a trail to be followed in the years to come by countless American military men. For Gridley and his fellow officers, in analyzing cover and concealment, state of the ground, and fields of fire, based their decisions on many elements that today are still basic in engineer intelligence.

Since that early morning in 1775 there have been many changes. Mechanization has expanded the military horizon from local to global scale, and has stepped up the pace of movement from a walk or trot to beyond the speed of sound. Modern weapons have replaced the old muzzle-loaders. Highly organized and well trained troops have taken the place of hastily recruited citizens. Elaborate maps and detailed studies have supplanted rough notes and sketches. Targets are now selected and analyzed for months in advance, instead of being wholly matters of opportunity. Unchanged, however, is the requirement to know and to assess—before embarking on a course of action—the total terrain picture, and your own and your opponent's engineer problems and capabilities. This knowledge, vital in Gridley's time, is even more significant today. The facts needed are far more numerous, and the detail is much more intricate, but whether at Bunker Hill or Bougainville, the fate of a patrol or a campaign may hinge on the availability and use of that segment of the "data for decision" supplied by the Engineers.

It has been said that the overall job of the Corps of Engineers is "to keep the Army moving." It can be added that the primary job of engineer intelligence is "to point where, when and how to go"—for this intelligence is a significant part of the machine that keeps the Army on the move. Engineer intelligence studies include data showing when and where movement is most feasible, either over established transportation lines or across country, and where and what types of enemy mines and fortifications might impede movement. Maps made by the Corps of Engineers not only depict the terrain and many of its selected characteristics, but also provide a graphic panorama against which military movement may be plotted and traced.

In recent years, engineer intelligence has played an essential role in our most impressive military operations. For instance, in making the successful Normandy landings of World War II, the Allied forces relied heavily on evaluated and interpreted beach and coastal data. Beginning two years before D-day, specialists working from documentary and photographic sources made minute studies of every beach on the Atlantic coast of France. Commando raids obtained sand and earth samples, and checked other data. Tide, surf, and swell tables were compiled. Underwater obstructions were charted. Beach gradients were calculated, beach exits analyzed and, finally, detailed maps and charts of the potential combat areas were produced. By 6 June 1944, an immense store of critical knowledge was available to the forces driving on the continent.

The subsequent advance across Europe into Germany likewise depended on a steady stream of engineer

Herbert L. Smith is a member of the editorial staff of the Terrain and Transportation Section, Engineer Strategic Intelligence Division, of U. S. Army Map Service.

In March 1945, when Hitler's Reich was rapidly diminishing, two U. S. officers climbed to a height overlooking the upper Saar River valley to analyze terrain that our forces soon overran

intelligence to supply the essential data on railroads, highways, towns, rivers, enemy equipment, and a multitude of other topics. Simultaneously, in the Southwest Pacific (nearly nine times the area of Europe, and then virtually unmapped), engineer information on beaches, airfield sites and enemy resources figured prominently in the island-hopping campaign that extended from Australia to Okinawa. More recently, engineer knowledge and analysis of the terrain and its influence provided invaluable data during the bitter action in Korea.

Informing the individual soldier

Accompanying the use of engineer intelligence in charting major campaigns has been the funneling of information to the individual soldier. To him, engineer intelligence is not the exhaustive studies prepared for staff use, but the simple orientation maps on which he can spot and analyze his location, the pamphlets which tell him the defects and virtues of enemy equipment, and the leaflets and cards alerting him to the characteristics of a new mine or booby trap.

Engineer intelligence is vast in scope, operating at all levels of military planning and comprising a very large segment in the total intelligence picture. It plays an important part in strategic intelligence, helping to formulate the high-level overall plan—and it figures significantly in combat intelligence, supporting the hour-to-hour action on the battlefield. To do so requires the assembly of a reservoir of facts, relatively stable, but under constant check—a base on which is produced the current intelligence that analyzes and summarizes the rapidly changing conditions. Engineer intelligence supports strategic, tactical, and logistic planning and operations; it is used in the examination of possible courses of action; it is a factor in political, economic, and psychological warfare; and it is used for supply, training, and research and development purposes.

The subject range of engineer intelligence is enormous, literally running from A (Avenues of approach) to Z (Zones of fire). It includes evaluation of material ranging from the natural environment (such as relief, drainage, and vegetation), to the physical characteristics of lines of communications, towns, and fortifications, to enemy engineer capabilities (embracing order of battle, engineer equipment and matériel), to maps, mapping information and the allied fields of geodesy, aerial photography, and map production.

Such scope and variety inevitably link engineer intelligence with many activities of other branches and arms of the service. Thus, the load and the amount of traffic a bridge will carry will be of interest to other arms, though the concern of engineer intelligence goes deeper. In addition to capacity, the engineers need to know the construction details of the bridge and the characteristics of the gap it spans, so that, as tactics demand, the structure may be strengthened, repaired, replaced, or destroyed. Similarly, the yield of a water source will be of widespread interest, but for maintenance, repair, or expansion purposes, the engineers are interested in not only the yield, but also the details of pumps and treatment facilities, and the geology of the area as well.

Engineer intelligence in combat

The significance of the role played by engineer intelligence in the planning and executing of a major military operation may be illustrated by an example under hypothetical combat conditions. Let us assume

MAPS MADE BY TOPOGRAPHICAL ENGINEERS ARE VITAL TOOLS FOR FIGHTING MEN OF ALL ECHELONS

Before reaching a decision in Korea in February 1951, Generals Ridgway and Clark study a map

In Holland in September 1944 officers of a recon outfit use a map to plot their future movements

a force is about to be committed to action in a hypothetical area. Let's plot the operation on a seven-phase timetable, extending from an indefinite period before the actual commitment of troops, until long after hostilities have ceased. Selecting the first day of action, D-day, as the midpoint, we then have three preliminary phases (D minus c, D minus b, and D minus a), and three subsequent phases (D plus x, D plus y, and D plus z). (This orderly timetable shows the advantage of being hypothetical; in actual events and circumstances there inevitably would be overlap, time inversions of incidents and events, and additions and omissions.)

In the winter of 1945 the Our River in Belgium was probed for fording sites by an engineer recon team

D minus c—*Period prior to commitment*

Long before troop commitment has been considered, long before mobilization itself, engineer intelligence has been in action, assembling and interpreting information, building up a valuable backlog of data in anticipation of possible needs. Now, in response to requests from strategic planning levels for specific intelligence to guide the commitment decision, further information is compiled, studies made, and maps analyzed. An overall engineer picture of the area is prepared. Data are assembled on lines of communication, possibilities for cross-country movement, availability of construction materials, locations of actual and potential airfields, existence of fortifications, and the host of other subjects essential for planning a military entry into the area. Estimates are made of the total engineer effort required, probable costs in men and materials, and the feasibility of conducting the operation.

If these investigations reveal that the proposed action is inadvisable, attention may be switched to another area. The Philippine invasion of World War II provides an example. Original plans called for the first landings to be made on the island of Mindanao, and for this purpose air facilities were to be built on the nearby Talaud Islands. However, detailed engineer studies on the required clearing and fill, on the soil characteristics, and on the availability of construction materials, clearly indicated that the needed air installations could not be developed in the time available. The operational plan then was changed and the assault was made directly on the island of Leyte, preventing a diversion of men and resources to an inexpedient project.

If a study of the engineer data equated against the multitude of economic, political, and logistical facts indicates that the proposed operation is feasible and fully justified, the commitment for action is made and and the timetable moves forward.

D minus b—*Decision for action is made*

Once the decision for action has been made, the locale is "pin-pointed" and engineer intelligence activity steps up. Detailed studies of the potential combat area are produced. Maps are prepared for operational use—new maps drafted if time permits, otherwise existing maps are overprinted with the latest data. If entry is to be made by sea, extensive surveys of coasts and landing beaches are made; if by air, drop and landing field sites are analyzed; if overland, avenues of approach are evaluated. When possible, aerial photo flights and ground reconnaissance missions are made to obtain or to check vital bits of data. Expected enemy equipment, obstacles, and fortifications are described and located. As the information is accumulated, it is examined and interpreted in the light of the anticipated action. Final operational plans, reflecting engineer intelligence studies and estimates, begin to take shape.

D minus a—*Everything in readiness*

By now, preparations are nearly complete and the assault will soon begin. Comprehensive studies are thoroughly analyzed and, in some cases, memorized in detail. Final reconnaissance checks are made. Troop briefings are held, featuring maps and terrain models prepared by engineer units. The gigantic task of map distribution gets under way. (The quantity of maps used by a modern army staggers the imagination. Millions of maps were printed and issued to American troops during World War II; in a single stack, they would tower 297 times higher than the Washington Monument.) In their distribution, security is essential and good timing is vital. In combat, few items are as important as the proper map at the proper time and place, few as useless as maps that arrive too late.

With everything in readiness, only the starting signal is required—and its timing is often determined by a review of the latest engineer intelligence reports. Finally, the word is given, and the military machine moves.

D-day—*Action begins*

Now comes the payoff for long preparation—actual combat. With the troops moving into the area are engineer intelligence personnel, checking the terrain conditions against earlier estimates and recommending revised courses of action if required. At Sansapor in the New Guinea campaign of 1944, for example, a beach specialist went ashore with the amphibious forces. He found the fringing coral reefs badly decomposed, dusty when exposed and muddy when submerged, impeding the off-loading of men and vehicles from landing craft. Familiar with terrain conditions, he promptly recommended a more favorable nearby beach, and the operations proceeded without delay.

As the assault continues, engineer intelligence production is tailored to the changing conditions, filling previously existing gaps, developing new data, and piecing together related fragments of information. Even before a beachhead or foothold has been firmly established, further engineer information will be needed for the advance of the objective.

D plus x—*Advance toward the objective*

Combat engineer intelligence is now functioning at full speed. In combat, some data correct and reliable at 1400 hours may be obsolete by 1430 hours, and a continuous program of checking and revising must be maintained.

Engineer reconnaissance units, motorized or on foot, constantly probe for information, observing, recording, and reporting. Their reconnaissance may cover roads, railroads, and towns; the searching out of enemy equipment, minefields, and fortifications; the detection of water supplies or the locating of electrical power sources; or the finding of construction materials. Engineer technical intelligence teams ferret out information on mines, booby traps, enemy engineer equipment, and techniques. Demolition, camouflage, and stream-crossing experts obtain data in their respective fields. Engineer topographic units gather and process map information and, in specially constructed mobile units immediately to the rear, they produce or overprint maps reflecting the latest situation. Engineer photo interpreters secure various types of intelligence data to be passed along the informational channels.

More than in the preparatory phases of a military operation, engineer intelligence during combat must not only meet the needs as they arise but must also anticipate them. The river that was a barrier yesterday may freeze over and provide easy passage tomorrow; it may then thaw and become a raging torrent, destroying installations and upsetting operational timetables. In areas where natural floods are likely or where floods can be artificially produced, flood prediction services, similar to those set up for the Rhine River in World War II and the Han River in the Korean action, prove invaluable in protecting men and equipment, safeguarding bridges, and assisting stream crossings.

As the advance moves forward, the flow of engineer intelligence continues. Touching many fields, it serves as a unifying element in the vast military picture. Special bulletins, intelligence notes, intelligence dossiers, strategic engineer studies, target studies, road and bridge data sheets, equipment charts and handbooks, maps and plans, and special terrain reports and studies, are some of the publications that alert the Army on the move. Depending on purpose and content, they range from one or two pages for field use to large volumes for planning by rear echelons. Urgent material is dispatched by radio, telephone, or special courier; less pressing matters go through routine channels. The primary consideration is to get the data to the proper person at the right time, so he can make the correct decision.

D plus y—*Area secure*

With actual combat concluded, for many the achievement of the objective and the securing of the area means mission accomplished, but for the engineers it is only another of many steps. Enemy engineer equipment must be rounded up, studied, and the data on it distributed. Mapping and intelligence must be brought up to date. Estimates for future courses of action are made, based on experience and the information uncovered.

D plus z—*Aftermath*

Checking goes on. Combat units have moved on to new areas, but intelligence units remain to survey, revise, and review. As the wave of battle moves forward, what was the objective may become the staging area for further action. Major reporting, research, and mapping facilities may be moved closer to the next scene of combat. Based on the pre-combat specifications provided by engineer intelligence, some engineer units stay behind and start the reconstruction or rehabilitation of important electric power stations, bridges, roads, railroads and canals.

Our timetable ends here, but engineer intelligence activity never ends. Facts unearthed through a continuous long-range program must be assembled, examined, and stored for the future. Facts that enable the engineers to provide the answers when and where needed. Facts that "point where, when and how to go."

Looking back on the years since Colonel Gridley planned America's first major battle defenses, the path of progress is clear. Engineer intelligence has come a long way. Looking forward, the path is less distinct, but the challenge is unmistakable. Atomic weapons and technological improvements will require faster, more complete, and more accurate reporting, and will demand specialized and more varied engineer information. To meet these requirements, improved techniques of collection, evaluation, and dissemination are being developed and the store of engineer intelligence is steadily being increased—assurance that, should the need arise, the Corps of Engineers will have available at the critical time the critical information, "the data for decision."

WHAT IS A GENERAL?

COLONELS HUGH M. EXTON and FREDERICK BERNAYS WIENER

Fate has a way of picking unlikely material.
Stephen Vincent Benet

SHOULD a general officer be a "generalist" or a "specialist?" Must the commander of an infantry division have been an infantryman? Should a comptroller have been a Finance officer? Can a Signal Corps officer or an Engineer be a combat leader? Is it necessary that The Adjutant General of the Army be an officer of the Adjutant General's Corps?

According to Section 3282 of Title 10, U. S. Code, "An officer holding an appointment as a general officer in the Regular Army may be called a general officer of the Regular Army. In addition, a general officer of the Regular Army in the Medical Corps, Dental Corps, Veterinary Corps, Judge Advocate General's Corps, or the Chaplains, may be called a general officer of that branch." In the Army's MOS structure a general carries MOS 0002 which identifies him as a "general officer."

It would seem, then, that the intent of law and regulation is that general officers, with few exceptions, be "generalists," trained, selected, and qualified to fill competently any of many senior managerial positions. It would seem also that, with few exceptions, general officer vacancies should be filled by promotion of the most qualified officers of the Army at large.

However, many general officers are promoted according to branch affiliations rather than as a result of the selection of the best officers in the Army as a whole. Is there not a possibility that promotion by branch may result in the advancement of officers who are not necessarily the most qualified in the Army as a whole, especially in the smaller branches? We believe that this is not only distinctly possible, but highly probable, and that the Army may be failing to advance its ablest leaders to general officer rank. The question then naturally follows, What should we do about it?

We will begin with a historical survey and follow with examination of recent military careers. Then we will approach the problem analytically, and survey existing position areas and the qualifications for incumbents. Finally, with both experience and analysis to guide us, we will be in a position to develop a categorization of general officer positions, and to determine the best methods for filling those positions in accordance with the Officer Personnel Act of 1947.

Colonel Hugh M. Exton, *Artillery* (USMA 1935), served with the 2d Armored Division during World War II. He is now on duty in the Pentagon. **Colonel Frederick Bernays Wiener,** *JAGC,* USAR, has been a Reserve officer for twenty-one years. During World War II he served in Trinidad, on Guadalcanal, and with Tenth Army on Okinawa. His current mobilization designation is with ODCSPER. He is now in the private practice of law in Washington, specializing in appellate cases.

SOURCES OF HIGH MILITARY LEADERSHIP: 1775-1945

A study of military leadership from the earliest days of the Republic demonstrates that unusual competence in the highest Army positions in every field, appears to have been essentially a matter of individual ability and aptitude; and that, while most of the outstanding leaders became such in the field to which they had devoted the major portion of their professional careers, exceptions occurred with consistent if unpredictable regularity.

The older concept of a general officer was that of an individual entrusted with the command of a force of combined arms, as distinguished from one who was wholly concerned with the command and operation of a specific arm. The very name, *general* officer, implied that such an officer was a generalist rather than a specialist. Inevitably, however, as the personnel of technical and administrative services increased in numbers, it became necessary to give increased rank to the heads of those services. Consequently there evolved the classical distinction between general officers of the line—the true generals, eligible and competent to command everyone anywhere—and general officers of the staff—the high-ranking specialists, eligible to command only within their own corps.

Up to a century ago, there was but little crossing over from one group to the other. General Jesup, who was Quartermaster General from 1818 to 1860, was sent to command against the Seminoles in 1836-38. The experiment was somewhat less than a notable success, but the pages of Ganoe's and Spaulding's histories bear ample witness that other commanders, from the line, likewise failed to attain outstanding triumphs in the campaigns against that particular tribe. When Jesup died in 1860, aged a ripe 72, his successor as TQMG was Joseph E. Johnston, who had been, in turn, an officer of Artillery, of Topographical Engineers, and, in the Mexican War, Lieutenant Colonel of the Regiment of Voltigeurs. Whether such a diversified military background constituted a satisfactory preparation for appointment as Quartermaster General will never be known, for within a year General Johnston resigned to join the Confederacy.

It is safe to say that, at this period, specialized training was not considered a prerequisite for appointment to general officer vacancies. Here are some representative Mexican War generals, all commissioned directly from civil life: Gideon J. Pillow, John A. Quitman, George Cadwalader, William D. Butler, Caleb Cushing (later Attorney General), and Franklin Pierce (subsequently our fourteenth President). Moreover, President Polk, who was suspicious of the political potentialities of his two field commanders, Taylor and Scott, asked Congress for legislation to authorize appointment of a lieutenant general, to coordinate and command the movements of those two. (It can hardly be said that Polk's fears were unjustified; Taylor and Scott were both outspoken Whigs, and, before long, ran for the Presidency on the Whig ticket; Taylor was elected in 1848, Scott went down to an ignominious defeat four years later.) At any rate, Polk's avowed candidate for the lieutenant generalcy was Senator Benton of Missouri, a stalwart Democrat. Specialization was deemed unnecessary; wide experience in public life (together with a sound view of party principles) was amply sufficient. It is of record that the lieutenant general bill was defeated in the Senate by just seven votes (Senator Benton abstaining).

The prevailing view, then, was that anyone can be

a general, and concomitantly, that a general can do anything.

Much the same attitude prevailed in Union circles after Sumter. Commissions as Major Generals were handed to a host of right-minded public men—who now are remembered primarily for their failures. In time, the shaking-down process produced some outstanding combat leaders out of men who had been simon-pure civilians when the war started.

Among Regular Army officers, engineers and topographical engineers seem to have had the inside track for general officer positions: McClellan, Halleck, Pope, Rosecrans, Meade, McPherson, Humphreys, Warren, Parke, H. G. Wright, J. H. Wilson. Some did well, others did not; some were able, some unable, a few can only be described as lamentable. By and large, prior branch affiliations counted for little; thus, Reno and Howard, captains of ordnance, became corps commanders. Similarly, the Union's two outstanding cavalry commanders were not cavalrymen; Sheridan had been a doughboy, J. H. Wilson an engineer and an inspector general. The only specialization was in reverse; by the middle of the war it was recognized in practice that certain positions required to be filled by general officers of the line would be entrusted only to individuals who would not in any eventuality be assigned to combat command, and who still had no particular specialty qualifying them to be general officers of the staff. An example is Andrew Johnson—later President—who was commissioned a brigadier general in order that he might function as Military Governor of Tennessee.

The Confederacy made better use of its trained soldiers, regardless of branch or lack of continuous service. Thus, General Longstreet, perhaps their outstanding corps commander, had been a major in the Pay Department when he resigned from the U. S. Army in 1861. General Leonidas Polk, though a Military Academy graduate, was Episcopal Bishop of Louisiana when the war started; in time he commanded a corps, and in the end he was killed in action. And of course the ablest Confederate, R. E. Lee, had been twenty-six years an engineer officer before being six years a cavalryman. If the concept of "branch qualified" had been formulated by 1861, it was assuredly not rigidly applied on either side of the struggle.

The Spanish War was of too short duration to throw much light on the subject now under consideration, and the principal reforms that it engendered—the reorganization of the Army, the creation of the General Staff, and the first real organization of the militia—are likewise not directly pertinent here. But it is relevant to note that all three developments can be directly attributed to the vision and the energy of one man, Secretary of War Elihu Root—a practicing lawyer without a day's military service. And the first Chief of Staff who made his influence really felt, Major General Leonard Wood, had begun his military career as an Army surgeon, and had served as a troop commander simply as colonel of the Rough Riders, the 1st Cavalry, U.S.V. (Theodore Roosevelt, it is too often forgotten, was simply lieutenant colonel of that regiment when it was mustered in.)

With World War I, however, the notion that anyone could be a general died, and although the Selective Draft Act of 1917 made provision for a volunteer force of four divisions—this was Teddy Roosevelt's second bid for martial glory—the organization of the Army proceeded along strictly professional lines. The only individual directly commissioned as a general officer from civil life was the Chief of Transportation, AEF, who in private life had been President of the Pennsylvania Railroad. But the idea that a general officer could do anything produced diverse answers.

Thus, General W. L. Sibert, who had played a large part in the building of the Panama Canal, was the first commander of the 1st Infantry Division. In late 1917, when that division was in France, he was relieved —for cause, according to his superiors' memoirs—and then became Chief of the then Chemical Warfare Section, where he functioned admirably.

During World War I, logistics, supply, and administration began to assume a role that foreshadowed their

present importance. As early as 1912, the Quartermaster, Pay and Subsistence Departments of the Army, then separate branches, had been consolidated into the Quartermaster Corps, to provide—so its sponsors hoped—a unified system of supply. That consolidation, when tested by the demands of actual war, did not accomplish the expected results, and indeed supply in the United States virtually broke down in the winter of 1917-1918. The Quartermaster General was relieved and rusticated to Charleston, to command the Southeastern Department, while General Goethals, the engineer who had built the Panama Canal, was called in to restore supply functioning in the U.S. Overseas, also, there were supply difficulties, which were not resolved until the command of Service of Supply was entrusted to an officer who had originally been Chief of Staff of Pershing's headquarters and who had successfully commanded the 2d Division at Belleau Wood. This was General Harbord, a cavalry officer who had come up from enlisted status. It might be expected that a man who had, literally, moved mountains in Panama would have the managerial ability to master the supply problems confronting an Army in a world conflict; it would be somewhat unexpected to find similar talents in a former cavalry trooper.

So far as the branch pattern of World War I combat commanders was concerned, the principal difference from the Civil War was the decrease in those who had come up through the Corps of Engineers. Only one engineer officer commanded a division throughout. This was General Kuhn, who had the 79th, a unit that was badly battered in the first phase of the Meuse-Argonne campaign, not sufficiently to warrant its commander's relief, but enough so that GHQ considered disbanding it as a division. (General MacArthur, also an engineer, commanded the 42d Division only for a few days.)

Except for a curiously high representation of Coast Artillerymen among the successful division commanders—Haan, 32d; W. R. Smith, 36th; Cronkhite, 80th; Bailey, 81st—the other combat commanders appear to have been fairly distributed among the other combat arms, with a preponderance among the infantry that reflected the greater percentage of infantrymen in the pre-war Army. Previous experience in the staff corps was plainly not disqualifying for assignment to command; Liggett, CG successively of I Corps and First Army, had been an adjutant general; Bullard, 1st Division, III Corps and Second Army, had had service in the Commissary Department; Hines, 4th Division and III Corps, had served in the Quartermaster and Adjutant General's Departments; General Edwards, 26th Division, had been for eight years the Chief of the Bureau of Insular Affairs. And, as in every conflict, many outstanding combat leaders developed among those who had been civilians before the war.

With the coming of World War II there was, as General Hagood had earlier predicted, another reorganization of the War Department in midstream, and logistics came into its own. If there was a pattern at all, it was that engineer officers came to the fore in virtually every field except combat leadership itself.

Industrial mobilization between the wars primarily had been the responsibility of the Ordnance Department. By late 1941 General Brehon Somervell, an engineer, became G4 of the General Staff, and in the March 1942 reorganization he became commander of Army Service Forces (ASF). Under him, ASF was, by and large, an engineer rather than an ordnance domain, although key subordinates came from other branches.

The administration of the entire atomic energy program, the ultimate success of which was exceedingly doubtful and certainly unpredictable, was entrusted to an engineer officer, General Groves.

The combat leaders' career pattern in World War II followed, in general, the World War I experience. Engineers again were in a marked minority as higher commanders, with perhaps the notable exception of General MacArthur, who, however, had served much longer as a general officer than as an engineer officer. Only a single engineer officer commanded a combat division throughout the war—General Oliver of 5th Armored. But engineer officers had combat opportunities as commanders of Engineer Special Brigades, which were in the forefront at amphibious landings. (Colonel Eugene M. Caffey, a judge advocate from 1930 to 1941, and later The Judge Advocate General, went back to the engineers for the duration, and won a DSC on Utah Beach with the 1st Engineer Special Brigade.) Similarly, new vistas opened for Coast Artillerymen who commanded AAA brigades, but only one officer com-

CHAR

	Branch		Years of Troop Duty							Commissioned in Regular Army From					G
			Company Grade			Field Grade									
			1-5	6-10	Over 10	0	1-3	4-6	Over 6	USMA	Cell	ORC	NG	EM	C&G
25 WORLD WAR II LEADERS	INF	14	3	10	1	2	6	6		7	2	2	1	2	1
	FA	3	2	1			2	1		2	1				
	CAV	4		2	2		2	1	1	2		1		1	
	CE	4	3	1			4			4					
	CAC	0													
	TOTAL	25	8	14	3	2	14	8	1	15	3	3	1	3	2
25 POST-WORLD WAR II LEADERS	INF	17	7	8	2	4	8	3	2	8	2	6		1	1
	FA	4	1	2	1	1	2		1	3		1			
	CAV	2	1	1			1	1		1		1			
	CE	1	1					1		1					
	CAC	1			1		1						1		
	TOTAL	25	10	11	4	5	12	5	3	13	2	8	1	1	2
25 CURRENT LEADERS	INF	6		2	4	3	2	1		3		3			
	FA	10	3	5	2	4	6			9				1	1
	CAV	5		2	3	1	3	1		3	1	1			
	CE	1		1			1			1					
	CAC	3		2	1	2	1			2		1			
	TOTAL	25	3	12	10	10	13	2	0	18	1	5	0	1	2
GRAND TOTALS	INF	37	10	20	7	9	16	10	2	18	4	11	1	3	3
	FA	17	6	8	3	5	10	1	1	14	1	1	0	1	1
	CAV	11	1	5	5	1	6	3	1	6	1	3	0	1	1
	CE	6	4	2	0	0	5	1	0	6	0	0	0	0	
	CAC	4	0	2	2	2	2	0	0	2	0	1	1	0	
	TOTAL	75	21	37	17	17	39	15	4	46	6	16	2	5	6

[1]Naval War College. [2]Air Corps Tactical School. [3]Infantry School. [4]Marshall did not. [5]VanFleet did not. [6]Inc

missioned in the CAC seems to have commanded an infantry division: General Frederick of the 45th Infantry.

In World War II as in World War I, staff experience was not disqualifying. General Eichelberger—I Corps and Eighth Army—had had considerable service in the Adjutant General's Department. General Paul, 26th Division, was commissioned in the AGD when the war began. Similarly, able civilians attained to high command; General McLain, 90th Infantry Division and XIX Corps, was a National Guard field artilleryman, and the first civilian component officer in U. S. Army history to be commissioned a lieutenant general. In private life he had been a banker. General Beightler, State Roads Commissioner of Ohio before the war, commanded the 37th Infantry Division throughout.

It is of course commonplace that the complexities of global war opened up new activities and new positions, with the consequence that new opportunities opened for officers of specialized branches. Thus, as in World War I, the Judge Advocate General's Department provided a Provost Marshal General, but whereas in World War I he had also been the Director of Selective Service, in World War II Generals Gullion and Lerch were simply the chiefs of the then Corps of Military Police. General Lerch went on to serve as the first Military Governor of Korea. The creation of the Legislative and Liaison Division opened up another opportunity for judge advocates. Similarly opportunities opened for officers of the Medical Corps. General E. E. Hume occupied a key position in the Military Government of Italy, while General Snyder was detailed as an Assistant to the Inspector General and served throughout the war in that capacity.

THE CAREER PATTERNS OF SEVENTY-FIVE GENERALS AND LIEUTENANT GENERALS

WE shall now examine the career patterns of seventy-five generals and lieutenant generals, twenty-five of whom were World War II Army leaders, twenty-five are from the Post-World War II period, and twenty-five of whom are serving currently (or were within the last year or so).

A study of the careers of those seventy-five officers indicates that they were branch qualified (see *Chart 1*). Of the seventy-five officers, thirty-eight upon promotion were assigned to positions definitely related to their branches, seven to positions definitely unrelated to their branches, and thirty to positions not definitely related to their branches. Using somewhat broader criteria, the figures are

EER PATTERNS OF SEVENTY-FIVE GENERALS AND LIEUTENANT GENERALS

	Instructor At					Civilian Component Duty			Duty as	Staff Duty Below General Officer															Dept Corps Area Army	War Theater	Corps	Branch Relationship					
										War Department Staff																	1st Duty as BG			1st Duty as MG		
C	Br	C&GS	AWC	USMA	Other	ROTC	ORC	NG	Aide	WPD (OPD)	G-1	G-2	G-3	G-4	AGF	ASF	Br	Bud	IG	SOS	OSW	Other				definitely related	definitely unrelated	not definitely related	definitely related	definitely unrelated	not definitely related
	5	4	2	4	1[1]	5		5	3																						
	3	1		1	1[2]	2																									
	2	1		1					1																						
									2																						
	10	6	2	6	2	7	0	5	6	6	0	2	2	1	1	0	9	1	1	2	3	4	12	5	3	12	1	12	12	1	12
	9	5	2	5		8	2	1	4																						
	3			1		1			2																						
	2			1																											
	1				1[3]																										
	15	5	2	7	1	9	2	1	6	5	1	2	1	2	2	1	2	1	1	1	1	1	10	1	5	12	2	11	17	2	6
	2	1		2		1			3																						
	7	1		6		2		1	4																						
	3				1[4]	1			2																						
						1																									
	1	1		2																											
	13	3	0	10	1	5	0	1	9	5	0	0	2	2	1	2	1	0	0	2	0	0	2	3	7	14	4	7	11	2	12
	16	10	4	11	2	14	2	6	10																						
	13	2	0	8	0	5	0	1	6																						
	7	1	0	2	0	1	0	0	5																						
	1	0	0	0	2	1	0	0	2																						
	1	1	0	2	0	0	0	0	0																						
	38	14	4	23	4	21	2	7	23	16	1	4	5	5	3	3	12	2	2	5	4	5	24	9	15	38	7	30	40	5	30

emeyer, German War College. [1]Including Eddleman, class cancelled. [2]Gavin did not.

CHART 2—CAREER PATTERNS OF TECHNICAL SERVICE CHIEFS 1941-1956

Technical Service	Total	Median No. years before transfer	Median No. years Troop duty	Graduate			No. having staff duty not with branch	Median No. years after transfer before becoming general officer	1st duty as brig gen directly related to branch	1st duty as brig gen not directly related to branch	1st duty as maj gen directly related to branch	1st duty as maj gen not directly related to branch	Lt Gen in duties not in branch	Total Lt Gen
				C&GS	AWC	AIC								
QM Corps	5	13	6	2	2	4	3	14	3	1	4	1	1	2
Sig Corps	5	7	7	5	3	0	3	20	4	1	4	1	0	0
Trans Corps	4	26	5	3	2	0	3	0	2	2	2	2	0	0
Chem Corps	5	8	9	5	3	2	3	19	3	1	4	1	1	1
Ord Corps	5	9	5	3	3	1	2	22	2	2	4	1	0	1
Corps of Eng	4	0	5	4	4	0	1	25	2	2	3	1	1	4
Total	28	9	6	22	17	7	15	20	16	9	21	7	3	8

approximately the same for the first positions held as major general although the individuals are not necessarily the same. It would appear, therefore, that branch qualification in itself was not essential to successful performance by those officers who had, as their first or later general officer assignments, duties not definitely related to their branches.

Analysis of the careers of these seventy-five leaders discloses little in the form of a standard career pattern during their developmental years. It is nevertheless obvious that the majority, early in their careers, were considered to have exceptional potential for high positions by virtue of their selections as students at the higher level schools, as instructors there, and as members of the War Department staff. Inasmuch as their careers are varied it must be inferred that their selection for key duties for initial promotion to general officer and for promotion to positions of high command or staff were based more upon their competence as individuals than upon any particular branch or skill qualifications. It is unlikely that chance played no part in their advancement and it is probable that chance always will be important in the success or failure of many officers' careers. Realism, not cynicism, requires the comment that being in a particular spot at a certain time or knowing a certain senior officer at some critical juncture may be of great and perhaps determinative influence on an officer's future. No one will ever know how many potential combat leaders were lost on Bataan and Corregidor.

These seventy-five Army leaders achieved their high ranks in positions other than with specific branches or services. It is appropriate to consider also the Chiefs of the Technical Services inasmuch as there may be an argument to the effect that a Technical Service Chief must have served for some length of time in his branch to have become qualified for the position of Chief. Another argument may be raised to the effect that a Technical Service officer has not been prepared for assuming general officer duties other than within his own branch.

An analysis was made of the careers of the Technical Service Chiefs (except Medical Corps) since 1941. While this is a relatively small group, certain points are worthy of note (see *Chart* 2). Of the twenty-eight officers concerned, eight reached the rank of lieutenant general, three in assignments not related to the Technical Services, and one reached the rank of general and theater commander. General Larkin served as Quartermaster General 1946-1949 without having ever served in the Quartermaster Corps and subsequently was Director of Logistics for the Department of the Army. (General DeWitt, a doughboy, had served as Quartermaster General from 1930 to 1934.) General Leavey became Chief of Transportation after serving as a Theater Chief of Staff, and subsequently served as Comp-

CHART 3—CAREER PATTERNS OF THIRTY-THREE REGULAR ARMY OFFICERS REDUCED FOR CAUSE IN WORLD WAR II*

Branch		Comm in Regular Army		Graduate of			Instructor at					Civilian Component Duty			Duty as Aide	War Department Staff Duty
		USMA	Other	C&GSC	AWC	AIC	Br	C&GSC	AWC	USMA	Other	ROTC	ORC	NG		
INF	14	4	10	13	12	0	10	4	0	2	1	8	0	3	2	6
FA	11	9	2	11	7	0	7	3	0	5	2	4	1	5	0	7
CAV	4	2	2	4	4	0	3	1	0	1	0	0	1	1	2	2
T&A	4	2	2	4	2	1	2	1	0	2	0	1	0	0	0	4
TOTAL	33	17	16	32	25	1	22	9	0	10	3	13	2	9	4	19

Branch		Branch Relationship						Reduced From		Reduced For		Repromoted
		Duty as BG			Duty as MG							
		Definitely Related	Definitely Unrelated	Not Definitely Related	Definitely Related	Definitely Unrelated	Not Definitely Related	BG	MG	Performance of Duty	Personal Conduct	to Gen Off
INF	14	11	2	1	6	0	0	8	6	11	3	3
FA	11	8	2	1	2	0	2	7	4	9	2	3
CAV	4	3	0	1	0	0	0	4	0	3	1	0
T&A	4	3	0	1	0	0	0	4	0	4	0	0
TOTAL	33	25	4	4	8	0	2	23	10	27	6	6

*This does not include Air Corps officers.

troller of the Army and SHAPE Director of Logistics. General McAuliffe, an artilleryman, was Chief Chemical Officer after distinguishing himself as a commander in combat and subsequently became a theater commander. (General Gilchrist, a medical officer, had headed the Chemical Warfare Service from 1929 to 1933.) General Wheeler was Chief of Engineers after serving as a theater commander. General Hughes, an Ordnance officer, served successfully as Commanding General SOS, North African Theater of Operations, and as Inspector General, European Theater, before becoming Chief Ordnance officer. General Ingles, a Signal Corps officer, served as G3 and Chief of Staff, Caribbean Command; Commanding General, Panama Mobile Force; Deputy Commanding General, U. S. Forces in Europe; and as Director of Operations, Army Service Forces, before becoming Chief Signal Officer. These examples show that technical service officers can serve successfully in high command and staff positions not related to their service, and that successful Technical Service Chiefs can be appointed from other branches. A current example of this is the present Provost Marshal General of the Army, Major General Haydon Boatner, an infantryman.

So much for success; what about failure? In order to determine what differences, if any, existed in the career patterns of unsuccessful general officers as compared with the seventy-five leaders already considered, an analysis was made of the careers of thirty-three Regular Army general officers (exclusive of Army Air Corps) demoted for cause during World War II (see *Chart 3*). This analysis indicated that their careers prior to becoming general officers were very similar to those of the seventy-five successful leaders who attained three or more stars. Indeed, all but one were Leavenworth graduates, and three quarters of them had graduated from the Army War College. Moreover, the relationship between branch and the first duties as general officer was closer among the broken generals—which hardly makes a case for branch qualification as a prerequisite for success as a general officer. But, plainly, just as circumstances and personalities affect promotion, so do they play their part in demotion. On occasion, a bust is almost demonstrably unjust. Several generals who lost their stars in World War II were subsequently reappointed. If, however, any generalization at all may be ventured, it would only be that failure, like success, is a matter of individual qualities—or lack of them.

ANALYSIS AND CATEGORIZATION OF GENERAL OFFICER POSITIONS

OUR study reveals that general officer positions in the Army fall, by and large, into these five areas:

PROFESSIONALLY RELATED POSITIONS

These are those positions which are recognized in civil life as "professional" and require long-term (usually at graduate level) school training and experience. Partly in deference to civil custom and largely because it would be uneconomical to utilize personnel possessing such skills otherwise than in performing duties requiring those skills, the Army accepts the proposition that a branch will have sole interest in these positions and that members of the branch will remain assigned to the branch no matter where they serve. Only the traditional three learned professions of theology, law, and medicine are so treated in the Army. (No generalist has ever entered these three specialties, although certain of the learned professionals duly became successful generalists: Lt. Gen. Polk, CSA, a clergyman; Generals Logan and Caffey, lawyers; and Gen. Leonard Wood, a doctor of medicine.)

TECHNICALLY RELATED POSITIONS

These are positions which normally require the incumbent to have civilian-type schooling at undergraduate or trade-school level, although graduate-level training may be required for advanced specialization. Career fields of this category are in some instances granted branch status (e.g., Finance) and in others are segments of a branch (photography) or found in several branches (procurement).

MANAGEMENT RELATED POSITIONS

These are the bulk of staff positions in the Army and generally require skills acquired through the learning-while-doing procedures, in some instances augmented by special schooling (usually short-term but occasionally also graduate as in comptrollership). For this reason and because broad military experience is the major qualification, in the main these families or career fields are not tied to specific branches.

GENERAL STAFF POSITIONS — The prerequisite for these positions is broad military experience.

TROOP COMMAND AND STAFF POSITIONS — Qualification for these positions at the managerial level is generally achieved by routine military assignments and attendance at service schools.

FROM consideration of the foregoing characteristics of positions, position families, and branches, it is apparent that the term "branch material" has only an administrative significance outside the three learned professions and some of the engineering positions. Although the Army has properly conformed to civilian custom by prescribing that only civilian-accredited clergymen, doctors, and lawyers will fill theological, medical, and legal positions, other positions are in fact "skill material," rather than "branch material," in that each requires the exercise of specific skills peculiar to the position. (We appreciate that "skill material" sounds like, and may be, stuffy sociological jargon; but it is really the only accurate phrase available.)

Stated another way, whereas both law and logic dictate that only a licensed physician practice medicine, there is no reason why a soldier must join the Quartermaster union to be a cook. The job itself requires the incumbent to exercise skills material to the area of food service; possession of Quartermaster insignia is incidental. Except in the three learned professions, therefore, the term "branch qualified" applied to personnel has no real meaning. Obviously, from private first class through captain, it would be a rare individual who would be qualified by experience and training to perform in all positions within the branch. With a few exceptions, primarily instructor-advisor type positions, senior positions (field grade and above) call primarily for the exercise of skills common to all such positions; to state that the incumbent must be "branch qualified" would therefore be meaningless in most instances.

Within the military service, as in industry, the four levels of responsibility may be termed the "doer," the "supervisor," the "manager," and the "director." These levels cannot necessarily be directly related to military rank but they can be related to the kind or type of jobs performed.

The doer can range from the private in a squad to a major general-surgeon who performs an operation on the President of the United States. At the doer level, jobs call primarily for the personal exercise of skills ranging from those held by many (the rifleman) to those possessed by few and requiring specialized training (the surgeon or scientist).

At the supervisory level the principles of management are required in varying degrees and the position incumbent may or may not be required to possess the same skills as the personnel he supervises. The lower unit commander and the chief of a medical or legal section should possess skills superior to those of the personnel they supervise. The senior unit commander must understand the capabilities and limitations of his unit but cannot be expected to possess all the detailed skills in the same degree of proficiency as the specialists within the unit. He must be able to evaluate performance, however, to the extent that he can exercise his own supervisory role effectively.

At the managerial level, the requirement for manual skills has disappeared except in the field of medicine, and the requirement for *personal* exercise of technical skills is uncommon except in the fields of medicine and law. The general management tools of psychology and knowledge of organizational methods are the primary position requirement of the manager.

At the director level, the requirement for specific manual or technical skills has disappeared. General managerial ability, including the attributes of creative thinking and uncommon judgment, together with prior outstanding performance in positions of lesser responsibility, are the usual prerequisites. At the upper levels of both government and industry, personnel are routinely appointed to director positions, based upon general eminence rather than upon specific professional or technical qualifications.

When by the process of successive selections the "best qualified" officer attains general officer grade (except

in the three learned professions), he theoretically administratively loses branch ties and becomes a "generalist." Positions set apart for occupancy by major generals and above are senior managerial and director type, with duties broadly stated in mission form. Analysis of these positions discloses that position qualifications for most are similar, and that, with few execeptions, any specific requirements relate to individual skills rather than those whose acquisition directly resulted from so-called branch material assignments in one branch.

Analysis of the characteristics of American military leaders over the years reveals that there is no determinable, finite common denominator by which such individuals can be measured. They had, by and large, no common background of birth, training, or experience. Each possessed, in his individual makeup, a synthesis of physical, mental, and moral attributes that comprised in totality what can only be called "the quality of personal greatness." Once an individual with that quality entered a position of authority, a leader emerged.

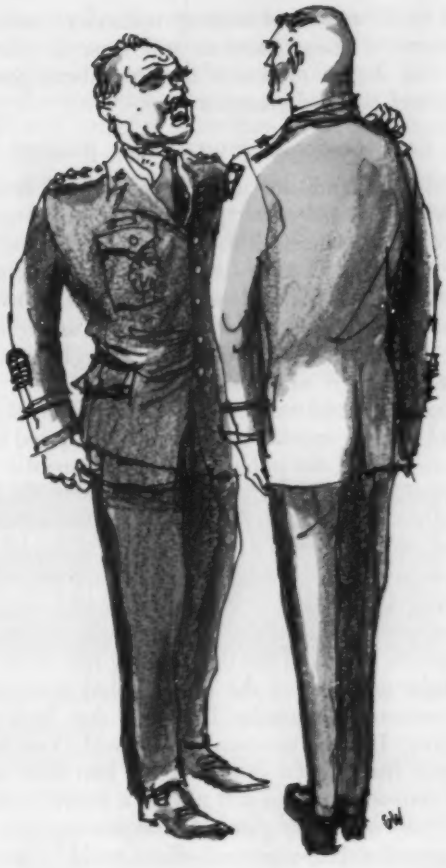
It may be mentioned as a matter of more than passing interest that one of the most fascinating aspects of the careers of higher commanders is what the record reveals as to their apparent levels of ability. Some World War II division commanders went on to command corps, armies, and even higher units. Others remained in command of their divisions throughout, from activation through inactivation. They were apparenty deemed not qualified for command of higher units, and yet, although continually in combat, gave complete satisfaction, and were not relieved. Division command was their ability level.

In general the factor labeled "the quality of personal greatness" can be recognized by these manifestations: morally, the leader has courage and tenacity of purpose; mentally, he combines intellectual curiosity with the ability to think creatively, to analyze objectively, and to arrive at logical conclusions; and physically, he possesses sufficient vigor to communicate his desires forcefully and insure their effective accomplishment. Although it is developed and tempered by experience, training in a particular field assists a leader in discharging some leadership functions in that field; qualification for high positions depends more upon "how well" than upon "what" an individual has done.

The concept that "the quality of personal greatness" is what determines qualification for high positions can be supported by current examples.

Four out of all Secretaries of Defense, charged with the overall direction of the Armed Forces, have been business men; no one has seriously proposed that it be a prerequisite to appointment to this office that the appointee hold a reserve commission, and indeed the law forbids even a retired regular to hold the position (special legislation was necessary to enable General Marshall to be appointed).

The present Secretary of the Army is a former State Governor, and a lawyer. Indeed, all of the really outstanding Secretaries of War—Calhoun, Marcy, Stanton, Root, Baker, and Stimson—were lawyers. There is no more reason to insist that the Secretaries must have extensive military experience than to require that the constitutional Commander in Chief must have it. How much military experience did our greatest War Presidents—Lincoln, Wilson, and Franklin Roosevelt—have? Lincoln was a militia captain in the Black Hawk war, the other two never wore a uniform.



Taking this thesis to the next echelon down from the Secretary level, the present Army Chief of Staff is an artilleryman. So are such other senior members of the Army Staff as both the former and present Vice Chiefs, the DCS for Logistics, the Comptroller of the Army, the former DCS for Personnel, the Assistant DCS for Personnel, the Director of Army Budget, and the Deputy Chief of Research and Development. Despite these superficially imposing statistical data, no such deductions as "positions in the DA Staff evaluated as requiring four stars are Artillery branch material," or "logistics and personnel management are artillery career fields," are supportable by logic. However, although it is not difficult to support with compelling argument the proposition that high positions in the Army Staff are best filled by professional soldiers experi-

enced in all aspects of military operations, successful occupancy of these positions still depends primarily upon the degree to which the incumbent possesses qualities of personal greatness.

Categorization of general officer positions

FROM the standpoint of law, policy, and historical precedent general officer positions can be categorized as professional (medical, theological, legal, some engineer) or non-professional (all others), and general officers could be considered as specialists or generalists. However, certain intangibles require a further refinement of categories. One of these intangibles can be entitled "prestige" or "public acceptability."

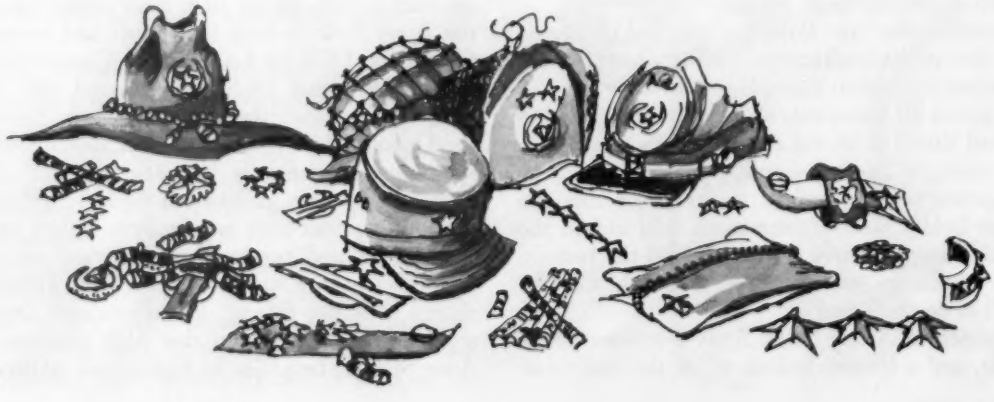
Successful performance in certain positions may well depend in large measure on the prestige enjoyed by the incumbent with the public, other governmental agencies, the Congress, foreign countries, or with the members of the Army itself. For this reason the Chief of a MAAG probably would have greater influence with the foreign army concerned if he were a combat arms officer than one whose career had been spent in one of the administrative services. Possibly one of the reasons why old General Jesup did less than passing well against the Seminoles was because the troops looked askance at a Quartermaster commander. It is plain that, back when the Navy's JAG did not even need to hold a law degree, Congress listened less attentively to him than to his Army counterpart, who was always a lawyer, and frequently an outstanding one. Consequently, even if it were agreed that any general officer could be assigned any position whatever from the point of view of his only ability to perform acceptably the duties involved, the question of prestige might well limit the selection of particular individuals to fill the position.

Another consideration based more upon emotion than upon skill requirements of particular jobs can be entitled "career motivation." If all the senior positions in a technical service hierarchy were habitually filled by officers of other arms and services, the junior members of the branch would not only lose confidence in their branch leadership, they would likewise lose hope in the possibility of attaining general officer rank themselves. Branch morale, and hence branch effectiveness, would suffer.

In World War II, the Chief of Finance was relegated to the supervision of war bond sales, and a Fiscal Director, ASF, a former officer turned civilian, was brought in to handle the Army's multibillion-dollar financial responsibilities. Even today, the new fiscal control positions are not being filled by officers with finance training. No Finance Corps officer has ever been Comptroller of the Army. The last few Chiefs of the Budget Division, OCA, have been officers of the combat arms. And today every general officer, with one exception, on duty in the Comptroller's office, including the Chief of the Army Audit Agency, is an officer from the combat arms. It may be desirable, therefore, to create a "protected" environment in which to develop Army career fiscal control officers, and a similar area in which to develop career logisticians.

Inclusion of these subjective considerations in categorizing general officer positions expands the number of categories from two (professional and non-professional) to four: Skill immaterial, command-skill related, logistic-skill related, and professional.

If we look at the general officer positions programmed for fiscal years 1956 and 1957 we note that all but an insignificant few (less than one per cent) require exercise of the five management skills (planning, organizing, directing, coordinating, and controlling) in varying degrees. In over 40 per cent of the total positions, proficiency in these skills and a general military background are the primary qualifications and the incumbent need not be otherwise "branch" or "skill" qualified. At the other extreme, approximately 8 per cent of the positions require occupancy by a "professional"—a licensed physician, clergyman, lawyer, or a qualified engineer—and less than 1 per cent by officers of special categories; a National Guardsman, for example.



Of the approximately half remaining, about a third of all positions list as a desirable additional qualification that the incumbent be an able troop leader; the remaining one-sixth must be experienced logisticians.

Although they have not been broken down into separate categories, it is significant that approximately 5 per cent of all general officers direct activities in each of the areas of personnel management, comptrollership (including business or fiscal administration), intelligence, and research and development. Although selection procedures need not directly take this fact into consideration, it would appear desirable to train a percentage of selected field grade officers in these skill areas, as well as in command and in logistics, so that normal selection to general officer would maintain the necessary number having qualifications in these areas.

Further, it appears that commanders of major composite troop units would be better prepared to assume their command responsibilities if they had been cross-trained with units of other than their basic branches. Of 285 general officers who commanded divisions during World War II and the Korean hostilities, 164 had been infantry officers, seventy had been artillery officers, forty-three had been cavalry officers, and eight had been in other branches. While it cannot be definitely determined, it is probable that these 285 division commanders would have discharged their command functions more effectively and with more initial confidence if they had previously been given broader combat arms training and experience.

THE SUMMING UP: CONCLUSIONS AND RECOMMENDATIONS

IN our opinion this study has demonstrated that:

Success of a general officer is primarily dependent upon individual ability and environmental circumstances.

The term "branch qualified" should not be applied to general officers, as branch qualification in a specific arm or service is not a prerequisite to successful job performance except in the professions.

General officer positions can be categorized into major skill groupings based on position duty requirements tempered by considerations of prestige and career motivation.

The best interests of the service would result from selecting general officers (except professionals) on a basis of individual merit from the Army at large.

General officers should be assigned to positions based upon an individual evaluation, position requirements and personal skills, rather than upon such arbitrary considerations as branch background.

These conclusions lead us to make these recommendations:

First, that general officer positions be classified in five groups:

(1) Professional (all medical, legal, and chaplain positions; some engineer and scientific positions).

(2) Skill immaterial (positions requiring only the exercise of managerial skills common in the experience of all senior officers).

(3) Command skill related (positions involving troop leadership or where prestige requires the incumbent to be a troop leader).

(4) Logistic skill material (positions involving business, fiscal, or industrial type activities).

(5) Special (e.g., Chief, National Guard Bureau; Director of Military Applications, AEC).

Second, that selections for appointment as general officers be based on demonstrated skill and potentialities falling within the categories listed above.

MEN WERE OBSOLETE

—until a battalion of infantry captured two great cities without firing a shot

CAPTAIN SMOZZLE II

GENERAL McGrew swooped his platform down in an easy landing at the new Army building parking lot and set it alongside Captain Pith's vehicle. The general winced a bit because he knew this would be the last day of Captain Pith's long service for the Army. This morning, 22 March 1990, the general had to inform Pith that he was to be released from active duty immediately.

Once behind his stainless steel desk, the general reluctantly pressed the button that would summon Captain Pith.

Even though neither of the two had worn a uniform for many years, Captain Pith maintained the custom of formally reporting to the general. The general quickly put him at ease and motioned him to a chair.

"Read the papers this morning?" General McGrew asked, avoiding Pith's alert brown eyes.

"Not yet, sir. Anything of importance for us?" Pith's voice was brisk and military.

"Well, there's a small item on . . . Well, the Army's been directed to make a cut. It looks like it's you this time, Pith."

"But, sir," the Captain protested. "There's just the two of us left. They can't . . ."

"They can and they did. We've been told to make a fifty per cent reduction immediately. Now I know it's hard, Pith. But after all, with the entire world covered there's just no further need for even a two-man Army. They feel I can do the job myself."

Captain Pith shook his head sadly. "I thought two years ago, when they ordered Supreme Sergeant Ruggles released . . ."

"Yes, I thought that would be the last time too," the general sighed. "But we were both wrong."

After Pith left to collect his final pay from the electronic financer, the general lit a cigar and sat staring at the world map projected on the wall of his office. His eyes paused as they swept across the wide ocean.

Once our country thought it was too far away for nations across that ocean to attack, he thought reflectively. Then came the period when we maintained strong forces to protect us from attack. Bigger and better weapons began to replace men. Now, defense was almost too simple. Any metallic flying object was automatically challenged by IFF and, if friendly, automatically answered in code impossible to duplicate. If it didn't answer, it was blasted out of the sky by automatically fired missiles before it got within a thousand miles of shore.

Not a single man was needed. Men had become obsolete. The machines were self-lubricating, able to replace their own burned out tubes and fuses. They even tested their own circuits and firing mechanisms daily.

The general crushed out his cigar in an ashtray replica of a long-obsolete ICBM. He glanced at his watch —only 0930. He actually had nothing to do himself, he admitted in his thoughts. He was needed only in case of the Eventuality. The Eventuality which could probably never come.

The telephone rang, abruptly jerking General McGrew from his thoughts. It was the Secretary of Defense, asking if Captain Pith had been released.

"I told him an hour ago," the general said. "Hated to do it. Pith is a good man. . . . Incidentally, sir, if you're going to be free this afternoon I thought it would be an appropriate time for our monthly review of the Eventuality plan." The appointment was made for right after lunch.

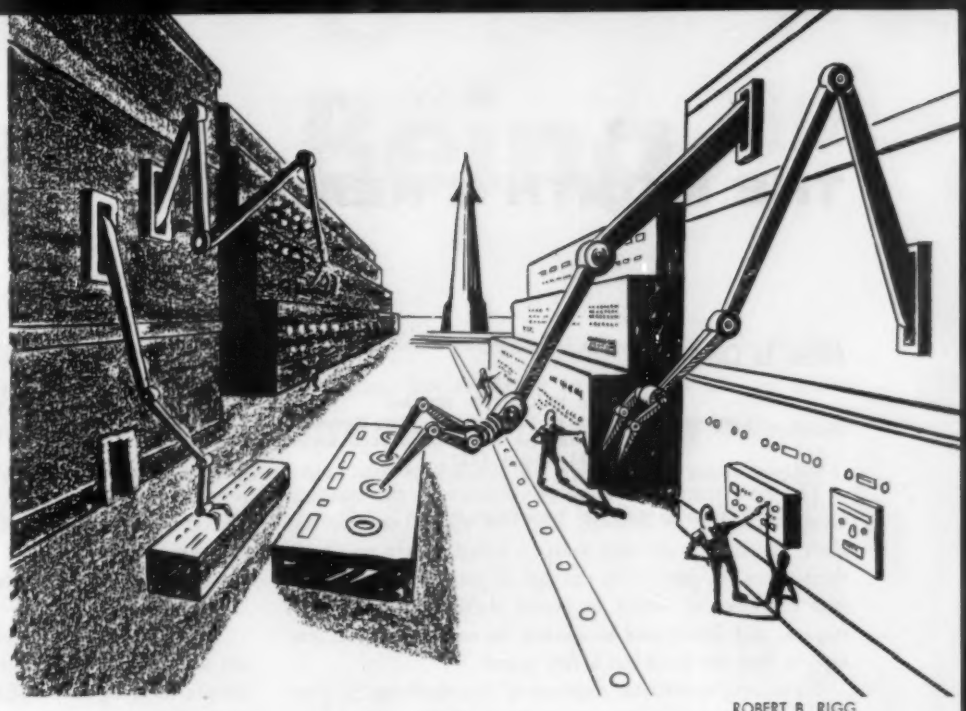
The general was admitted to the Secretary's private office immediately upon his arrival. The Secretary sat behind his desk, two folders stamped ULTIMATE SECRET in front of him. Like General McGrew, the Secretary didn't have much to do. The monthly review of the plans made both of them feel a little less useless—a little less subservient to the devices which had replaced every human being except themselves in the defense structure of their nation.

Only three men in the world knew the exact contents of the folders on the Secretary's desk. Those men were the Secretary, General McGrew, and the President. The Secretary opened the discussion by hoping, as he always did, that the plans for the Eventuality would never have to be implemented.

He opened the top folder, containing the Air Defense system. A series of surveillance radar networks, IFF radar, and the underwater based, automatically fired missiles—perfect for the defense of the nation except for the Eventuality.

The Eventuality that somehow, something would penetrate the screen undetected, or, if detected, elude the missiles and thereby effect an attack. The Eventuality plan was in the second folder.

"Well, here it is, General," the Secretary said, spreading the charts before them. "Any attack made on our territory will necessitate a decision by the President himself. If he decides on retaliation, he will order you, through me, to fire whatever number one-hundred megaton missiles he deems necessary—probably enough



The machines picked out the target and fired missiles automatically . . .

ROBERT B. RIGG

for complete obliteration of the offending nation."

The general completed the boiled-down version of the plan. "Then I, as the Army, operate the actual dispatching controls, located in the vault beneath the President's home. Or—if absolutely necessary—you or the President can operate them. Alternate controls are located at two key cities in the event the Capital is destroyed. Instructions for their use are in sealed ULTIMATE SECRET envelopes in the hands of top government officials in both cities. That's in case the entire government here at the Capital is annihilated at one crack."

"That computer," the Secretary said, pointing under his desk to a small, inconspicuous dial, "and the duplicate in your office report to us each morning that all Eventuality firing devices have been automatically checked and are ready for action."

The two men spent the remainder of the afternoon poring over the detailed plans, checking every word and chart against technical facts, looking for any conceivable flaw in the perfect system. General McGrew was an Electronics Engineer, of course. In 1975 the degree had become a requirement for retaining a commission.

Three days later—at 0550 hours, Sunday, 25 March, 1990, the Eventuality occurred.

General McGrew was awakened by the ringing of his bedside phone. "Didn't your Eventuality alarm sound, General?" asked the Secretary's voice, high-pitched with urgency. The General looked at the light and bell system installed right over his bed. It was not indicating any alarm.

Before the general could say so, the Secretary sputtered, "No, of course the alarm wouldn't work. It's electronic too."

"What do you mean, sir?" the general asked, a feeling of foreboding beginning to crowd the sleepiness out of his brain.

"Everything electronic apparently ceased to function about half an hour ago—radios, servos, radar. I got the call from the Chairman of the AEEC. He says something that prevents their operation has apparently blanketed the whole country."

"You think there's going to be an attack?" the general asked, his sleepy mind trying desperately to grasp the situation.

"We don't know yet. All our communication is electronic, don't forget. We don't even know the extent of this thing. But it must be a prelude . . ."

General McGrew dressed in minutes. He rode his flying platform at Mach 2 all the way to the President's mansion. The President, the Secretaries of State and Defense, and the Federal Police Chief were already assembled. An atmosphere of doom pervaded the conference room.

"How about the police?" the Secretary of State was asking the chief of the FP, as General McGrew entered. "Could the police be mobilized?"

The man shook his head. "Most of them have been mechanically replaced too. Besides, the few men still working as policemen in the more backward areas of the country aren't trained as soldiers."

"Would someone please brief me?" General McGrew asked respectfully.

The President seemed calm, but there was no question about the stricken look on his face or the dull tone of his voice as he spoke—the country was doomed.

"We have only heard from two cities so far, General McGrew," the President said. "There are undoubtedly others. The two cities we know about dispatched couriers to us immediately when they were attacked."

"Are . . . are those two cities completely destroyed?" General McGrew asked, his voice quavering.

"No," the President said quietly. "As a matter of fact they weren't even missiled. They were *captured*, General! Two cities, each with about two million inhabitants, captured by what we used to call a battalion!"

THE MONTH'S READING

Man Is Decisive

GENERAL WILLARD G. WYMAN
Commanding General, U. S. Continental Army Command
Address, National Convention of AMVETS, Boston
23 August 1957

The first man to employ gunpowder in the military weapon killed only himself. The first man to employ nuclear fission in a military weapon killed nearly one hundred thousand people! In the age of gunpowder mankind had centuries in which to evolve doctrine, tactics, techniques, and *limitations* to control its use. In the nuclear age, at best we have but a few years!

To achieve a dynamic response to this challenge in your Army, we have called upon our officers and men for a leap of the mind and heart so vaulting that it is no exaggeration to call it a "mental metamorphosis."

This metamorphosis is now taking place in study halls, class rooms and on maneuver grounds of military schools and training camps throughout the United States. Already we have concepts for future operations as advanced from those employed in World War II and Korea as the Battle of Bastogne was from the Battle of Bunker Hill!

Under the conditions of atomic battle, our concepts portray no lines of intrenchments, no masses of men waiting in reserve, no roads jammed with trucks moving to the front. In fact, we see no front. Only a battle area!

Within the battle area, to a depth of as much as a hundred miles or more, we see small mobile units deployed at intervals measured in miles instead of yards. While their numerical strength per unit is not much greater than a reinforced company of World War II days, their firepower exceeds that of your old regiments and includes all the trajectories of divisional artillery. With this firepower, they dominate the unoccupied ground between them. When the units move, they are guarded against radiation and blast by a protective skin. At rest they are dug in for all-round protection and camouflaged.

Large scale attacks and major movements are nearly always conducted at night—though infra-red ray devices, radar, and artificial moonlight have greatly reduced the concealment once afforded by darkness. Control over the units is exercized through a grid communication net that can not be cut or knocked out. Individual helmet radios replace the platoon leader's whistle. Troop-carrying helicopters and armored personnel carriers provide mobility. Corps and Army artillery no longer maneuver with the units they support. From far in the rear of the battle area, guided missile batteries can instantly place fires—atomic or non-atomic—anywhere necessary to influence the course of ground operations.

Even the language of operations is changing. New concepts call for new definitions of old terms—even new words to convey our thoughts. For instance, the word "defend" no longer means what it did when you donned steel helmets in World War II. In some situations, an order to defend actually calls for aggressive action to knock out the enemy before he can launch a coordinated attack. Under the conditions of atomic battle, taking and holding the *initiative* is more important than taking and holding a hill.

Though many of the tools to implement these concepts are still in limited production or on the drawing board, we are not standing still waiting for them. We are going ahead with what we have on hand and on the way, developing the doctrine, organization and tactics for their use.

No aspect of war is being left unexplored in your Army's response to the challenge of our nuclear age. Even the distant realm of war's philosophy is under thoughtful scrutiny at our war colleges and great universities such as nearby Harvard. Recently I read with interest a critical analysis of the time-honored hypothesis advanced by Karl von Clausewitz that "war is an act of force without limitation." Even in the abstract, the writer pointed out, this philosophic concept is no longer tenable in the nuclear age when political restraints are inadequate and material barriers to its realization no longer exist. The analysis I speak of was written by a sergeant!

I mention this in passing not only to demonstrate the broad extent of our Army's mental response, but to emphasize that sparks fly up from *people*—all the people in our great democracy! And we welcome creative ideas from all sources. In fact we *invite* them! Only this summer we adopted a revolutionary method of teaching rifle marksmanship that was suggested by a civilian scientist.

The metamorphosis now taking place in your Army, however, is much more than just a state of mind. It is a matter of *muscle*—combat muscle to cope with immediate and very real dangers that could materialize tomorrow at any one of a dozen hot spots in today's troubled world.

By muscle I mean *men*—not just military machines. The most marvelous weapon that technology ever produced is just a tool in the hands of a man. Upon his human skill and determination to use his tools, all else in war depends. Every tool of war devised by man, whether it swims in the sea or flies in the air, is designed for just one purpose: to prepare for and support the operations of your Army where the enemy lives—on the ground! So no matter how high our minds soar, the decisive factor in our response is *man* on the ground and his leadership there.

Army in Being

Their successes with Sputniki and ICBM's aren't enticing the Kremlin to discount land forces. The 175-division Soviet Army in being is armed with modern weapons (see page 57) of all kinds and is emphasizing new tactical concepts, including ground and air mobility. In the Soviet view modern mass armies continue to be the "main element of the armed forces"

RAYMOND L. GARTHOFF

THE Soviet Army continues to play a major role in USSR strategy for nuclear war. The fact that it maintains 175 divisions makes this clear, and its military writings are replete with statements reflecting and affirming the Soviet belief in the importance of large ground forces in the nuclear era.

Marshal Zhukov in 1956 and 1957 provided several clear statements of the Soviet view on the role of large ground forces. After denying that air power and nuclear power are now predominant in war, he stated that mass armies are necessary even in a general nuclear war: "Air power and nuclear weapons by themselves cannot decide the outcome of armed conflict. Along with atomic and hydrogen weapons, in spite of their tremendous destructive power, large armies and a tremendous quantity of conventional arms inevitably will be drawn into military operations." Another Soviet general said in 1956, "Mass armies are needed for victory in atomic war, too. . . ."

The recent ouster of Marshal Zhukov has considerable significance for the relationship of the armed forces to the Communist Party leadership, and the Army's voice in highest policy councils has been muted. But it is quite important to note that no military strategic or doctrinal questions have been associated with Zhukov's dismissal. Marshal Malinovsky, his successor, holds views similar to Zhukov's and comes to the position from his previous position as a senior Deputy Minister and commander-in-chief of the Soviet ground forces.

"Mass armies," in the current Soviet doctrine, must not be confused with the mere masses of soldiers which so often formed the Red armies of World War II. The term must be understood in the light of continuous postwar modernization which has converted the Soviet Army into a potent modern ground force. The 1945 Red Army of fifteen million was a massive agglomeration of more than six hundred "divisions," the vast majority of which were infantry formations of brigade strength with horse-drawn transport. During the postwar period, a drastic reorganization was undertaken. Demobilization was selective and was part of the modernization program. In 1945 there were ten infantry divisions for each armored (tank or mechanized) division; by 1947 the ratio was two to one, and now may be approaching parity. By the end of 1947, the Soviet armed forces had reached the level of its postwar peacetime standing force: approximately four million men in the three services (plus 400,000 security troops), of whom two and one-half million were in the ground forces organized into 175 line divisions. The size of this powerful standing ground army, with a large reserve establishment and a standard system of conscription by annual age class, remained virtually constant until 1955, although continuous modernization raised its capabilities.

Raymond L. Garthoff is a specialist on Soviet military and political affairs. He has written several articles in *Army*, the latest being "The Only Wars We Can Afford" (November 1957), and is author of *Soviet Military Doctrine* (1953), and the forthcoming *Soviet Strategy in the Nuclear Age* (Praeger, N. Y., 1958), from which this article is adapted.

During 1955 and 1956, the Soviet government announced, with much fanfare, reductions in military manpower totaling 1.84 million. While it remains uncertain—indeed doubtful—that such reductions were really made, there was a sizable gradual demobilization.

Causes of "reductions"

The main cause of the cut was economic and demographic: men were more needed as industrial, and especially agricultural, workers than as soldiers. It was a calculated reallocation of manpower resources to the relatively under-strength economic sector from one that was over-strength in relation to the West.

Reports by Western military observers indicate that the 1955 cuts resulted in no decrease in the number of divisions. In general, reductions were apparently made by shifting some divisions from their full-strength combat-ready status to "cadre strength," thus preserving the officer and noncommissioned officer complement. Also, there was some decrease in supporting elements. It was estimated that 30,000 junior political officers were dropped, since the post of full-time political assistant at company level was abolished in 1955.

Another reason for reducing the standing ground forces was that it was becoming too expensive for the Soviet Union to maintain the traditional level of massive ground forces, and simultaneously to compete with the United States in acquiring the exceedingly costly modern strategic offensive and defensive weapons systems. Faced with a choice between pulling abreast of the U. S. in modern weapons or maintaining the enormous existing standing army, and in view of their tremendous preponderance in ground strength, the Soviet leadership reduced its army. It could afford to do this since even *after* the announced reductions in force (and those among satellite countries), the Soviet bloc retains a superiority of nearly three to one over Free World combat forces, both in Europe and in Asia. In this perspective, impressive as the reductions seem at first glance, it is significant that they have been so limited (to say nothing of the fact that apparently they fall short of announced goals).

The reduction in ground forces is often cited as an illustration of a presumed nuclear "New Look" paralleling that made in the United States and Great Britain in recent years. In a sense that is true, but it is necessary to note other influences which led to this decision: the severe ethnographic-economic pressure, and the continued weakness (in fact, decline) in numbers of U. S. and NATO ground forces. The real New Look in the Soviet ground forces has been their systematic modernization over the past decade.

Land forces decide the outcome

The reduction in standing force does *not* mean that the Soviets consider a large army unnecessary in nuclear war. The continued maintenance of between 140 and 175 divisions, and other ground units, plus the continued training of a multimillion reserve, provides the basis for rapid mobilization of modernized mass armies the Soviets expect to employ in a major nuclear or non-nuclear war. *The Great Soviet Encyclopedia* (1956) continues to declare: "The ground troops are the main element of the armed forces. . . ."

The Soviet concept of modern mass armies must be considered in terms of its relation to the doctrine of combined-arms operations, centered upon support of ground forces by tactical aviation and coastal sea forces, but now broadened to include actions by the long-range air, sea and missile components. Marshal Zhukov, in a 1957 speech to a military audience in Moscow, said: "In the postwar construction of the armed forces we are proceeding from the fact that victory in future war will be achieved only by the combined efforts of all arms of the armed forces and on the basis of their coordinated employment in war."

Soviet ground forces are being maintained on a scale considered sufficiently substantial to permit both immediate commitment and simultaneous use of the remainder as the cadre for mobilizing the large reserve strength. The ground forces are preparing for tactical nuclear warfare but, as we shall see, this by no means implies a reduction in strength, particularly since in the past, Soviet Army divisions have been smaller and less encumbered with support and service troops than have those of Western nations.

The Soviets maintain large ground armies for a number of purposes. Extremely long frontiers require Soviet military planners to calculate on the possibility of simultaneous military operations on several fronts. Maintenance of order and guard duty over numerous installations spread through vast areas, and patrolling and guarding frontiers, are shared by Internal Troops of the KGB and Frontier Guards of the MVD. Maintenance of internal order in the Soviet empire, especially in satellite nations, requires large ground forces. Quelling the revolution in Hungary in November 1956 required a reported seven to twelve divisions. In addition to these considerations, the basic reason for maintaining more than a hundred combat-ready ground divisions, plus many other cadre divisions and brigades, is the belief that winning any major future war, despite the employment of nuclear weapons, will require defeating enemy land forces and seizing and occupying vast land areas. This requirement might be even more essential in a nuclear war, because industrial, economic, and labor resources of other countries would be harnessed partly to compensate for the extensive damage which the Soviet economic system would suffer in the mutual strategic exchange.

The requirements of a military establishment with a large land force as a central component can be met only by the resources of a large and mobilized economic-military potential. And since employment of mass armies in a long war can be contemplated only in the present geostrategic arena, it is clear that the Soviet conception of a long war and that of an irreplaceable role for massive land forces are interdependent.

In viewing the course of a general nuclear war, the Soviets evidently do not subscribe to the view that mutual devastation spells mutual defeat. The destruction of a number of Soviet and American cities would have an effect difficult to predict, but one which would affect both sides. Soviet mobilization and dispatch of ground forces would probably be much less critically disrupted than would ours, because of the larger force in being and of its deployment. The mutual destruction of strategic airbases, and possibly cities and industry, would presumably consume the major part of the long-range air forces, and the Soviets apparently calculate that the continued efforts of these forces would in a sense cancel out each other. If the Soviets consider the level of destruction both at home and in the theater of war to be roughly symmetrical, as they apparently do, then no matter how great this level, the remaining Soviet land forces would still be able to defeat the proportionately weakened enemy forces on the ground. But they believe, in the face of enemy nuclear strength, the overcoming of all enemy resistance on the Eurasian periphery may require major campaigns and large forces. They intend to be prepared. The Soviets visualize the role of the combined ground and supporting air forces not in a subsequent mopping-up stage but as a contemporaneous, significant element in determining the outcome of the war. As Marshal of the Tank Troops Rotmistrov said in the semi-classified General Staff journal, *Military Thought* (February 1955): "It is entirely clear that atomic and hydrogen weapons alone, without the decisive operations of the ground forces with their contemporary matériel, cannot decide the outcome of a war."

MARSHAL MALINOVSKY

Training for nuclear war

The Soviet Army was tardy in facing the challenge of preparing for nuclear warfare. Under the influence of "Stalinist stagnation" in military doctrine, incredible though it seems, there was literally no preparation for atomic warfare prior to the autumn of 1953. At that time, the first small-scale experimental maneuvers hastily tested the initial ideas on defense against tactical atomic attack. Also, in 1954 and 1955, the first series of articles on nuclear weapons belatedly appeared in *Red Star*, other service journals, and in training publications. During most of the first year, these discussions were limited to elementary explanations of nuclear physics of an atomic explosion, the structure of a "basic" atomic bomb, and effects of a nuclear explosion (using, almost entirely, American published data on a nominal 20-KT explosion). Later, in 1954 and 1955, protective measures against atomic attack were discussed. In 1954 a series of manuals on atomic warfare appeared, including one for privates and sergeants. During those two years substantial strides were made in training for atomic warfare. A large motor howitzer reportedly capable of firing nuclear projectiles was paraded publicly. The atomic age had come, if belatedly, with a real impact on the Soviet Army. Thus, when Marshal Zhukov addressed the Twentieth Congress of the Communist Party in early 1956, he could state with assurance: "In recent years considerable work on the training of troops in the art of conducting combat operations under conditions of the use of atomic weapons and other new weapons in the ground forces, aviation, and the navy has been conducted."

Defensive measures against atomic attack have been extensively discussed in Soviet writings. Discussions of measures for personal and unit protection against blast and radiation effects of nuclear weapons are frequent. Passive defensive measures emphasized are importance of cover, protective clothing, use of protective terrain features, and thorough decontamination of personnel, equipment and weapons. But while Soviet soldiers are taught protective measures they are also taught, in the words of the official manual, that "the fulfillment of the combat mission is the first and basic duty of the soldier." Thus, "at the signal of the atomic alert the fulfillment of combat tasks does not cease. . . . In the offensive the best means of action at the warning is determined closing with the enemy. . . . In the defense, in deployment, and in the concentration for the offensive departure continue to fulfill your mission. . . . On the march, at the signal of atomic alert movement does not cease."

Engineering preparation of the terrain, as well as individual digging in, is stressed: "The significance of

engineering work increases considerably under the threat of the enemy's using atomic weapons." Development of special high-speed mechanized engineer equipment has been urged. The construction of revetments and bunkers for command posts, artillery emplacements, tanks, and aircraft is advocated. Of course such provisions are not permitted to encourage a tendency to sacrifice maneuver for static protection. In the first place, maneuver is considered generally *better* protection, and in addition the Soviets do not want to lessen offensive spirit by stressing emplaced protective shielding. The general deemphasizing of fixed positions and lines in nuclear warfare parallels our own.

The Soviets well recognize the tactical implication of nuclear weapons: "Above all, the concentration of a large quantity of troops and matériel will be significantly more difficult. The enemy will attempt to drop atomic bombs on concentrations of personnel and matériel and on strong defense points." Defense against enemy air attack, in particular, assumes greater importance. Hence, recognition of the need for dispersion.

Dispersal, we know, is an easily recognized *requirement* for tactical nuclear warfare, but a most difficult one to satisfy without sacrificing the requirements of defensive, and especially of offensive, deployment. The doctrinal "solution," as stated by Major General of the Tank Troops Losik (early 1957) was that: "Under conditions of the employment of atomic weapons, troops will in general operate dispersed in order to save men and matériel, collecting into a striking concentration only at the time of the attack." The means of dispersing, and of gaining concentration when necessary, have been indicated in some Soviet writings and in training. In general, of course, they all involve solutions to the second big "requirement" of atomic warfare: mobility.

Achieving mobility

We are told by Colonel Mochalov (1956) that "mobility of the troops is considered the key to victory in all forms of combat operations under conditions of the employment of means of mass destruction." Later on we shall note the measures planned to effect this mobility.

A third major problem, and heightened need, seen by the Soviets for tactical atomic warfare, is increased effectiveness of reconnaissance. Detection both of enemy attacks, and of targets for their own attacks, requires in Colonel Mochalov's words, "a more precise organization of reconnaissance than in usual [that is, non-nuclear] circumstances." The fleeting nature of attractive targets is recognized, as is the fact that "combat targets will be more mobile and more dispersed." And, as Major General Pokrovsky stated in an authoritative but private source (1955), "the role of timely detection and destruction of the enemy's atomic weapons, in particular, increases."

Besides mobility, dispersal, and improved reconnaissance, another measure emphasized by the Soviets for achieving defensive security is the "hugging" technique. As a Colonel Yakovkin has put it, "The best defense against an atomic strike is precipitate closing with the enemy," so that he cannot use atomic weapons without endangering his own front lines. Thus the Soviets are led to implement the old principle that "the best defense is offense."

The Soviets, of course, are studying both the defensive and offensive effectiveness and characteristics of tactical nuclear warfare. On balance, they conclude, in the words of Major General Tsigichko in *Military Thought*, that "atomic weapons significantly increase the offensive potentialities of the ground troops." In particular, as another authoritative source said recently, they can be employed in the offensive to achieve "a swift breakthrough of defensive lines and destruction of the tactical and close operational reserves of the enemy."

Traditional Soviet military doctrine on the forms of offensive maneuver is considered to be upheld and enhanced in nuclear warfare. Use of nuclear weapons "dealing powerful surprise blows on the enemy" may permit tactically "achieving decisive results in a shorter period of time." Moreover, we read in *Military Thought* that "employing atomic weapons, the attacker has the potentiality of breaking through the enemy's defense in high tempo, quickly converting the struggle into the operational depth, and creating favorable conditions for dealing blows on the flanks and rear of his defending groupings with the aim of their encirclement and annihilation." And, after an encirclement has been effected, "the use of atomic weapons in annihilating encircled troops will significantly speed the period of their liquidation." Key targets for tactical atomic strikes in a large encirclement are "the most important points of command," "the most solid points of resistance," and troops preparing for a breakout.

The heightened requirement for mobility and maneuverability in the nuclear era leads to increased reliance on armored forces. Marshal Rotmistrov, Colonel General of the Tank Troops Poluboiarov, and others, in recent years have expressed the authoritative view on the increased role of armor. Defensively, it is pointed out, "tanks, in comparison with other weapons, are less vulnerable to atomic weapons." But armored forces are essentially an offensive arm. In nuclear warfare, their primary role is to penetrate enemy defenses and then to maintain the momentum of advance. As Major General of the Tank Troops Pinchuk said (1956): "The mobility, maneuverability, great fire power and shock power of the armored forces permit tankers to participate in the initial echelons in the breakthrough of strongly fortified defensive positions, and to develop high tempo of offensive in the course of battle." In particular, as Marshal Rotmistrov has indicated, tank forces are considered the most suitable for effecting a breakthrough by assault, exploiting a breakthrough or an atomic strike, and encircling large enemy groupings. More generally, Soviet infantry also is relied upon to

keep up with the necessary pace of movement by means of wide-scale use of tracked armored personnel carriers, and with tankborne infantry. Artillery support is, in significant degree, to be provided by the wide variety and large numbers of armored self-propelled guns organic to all Soviet divisions.

In addition to the increased importance of armored forces, airborne landings also assume a greater role in achieving mobility in nuclear warfare. In nuclear warfare airborne troops can exploit advantage in the offensive, particularly after the disruption caused by nuclear strikes, and can block enemy advances when the defense has been punctured by enemy nuclear blows. They also serve as a major reserve in tactical nuclear combat. Finally, as was said in *Military Thought:* "Airborne troops can conduct independent operations in seizing the most important targets and regions on the territory of the enemy. In addition they participate in combined operations. . . ." In particular, in the combined forces offensive, "for the swifter isolation of encircled groupings and the achievement of success of operations of the troops in encircling and destroying the enemy, airborne landings will find wide use."

Helicopters are accorded a large role in achieving tactical mobility. Major General Pokrovsky, in *Military Thought* (1955), declared that the wide use of helicopters "will lead in the near future to significant changes in the character of military transport and the tactics of troops operating in the enemy's rear and in mountainous and difficult terrain." Soviet air shows, notably that of June 1956, demonstrated this technique, and disclosed the active research and development of a variety of suitable vertical-lift carriers like the YAK-24.

The Soviets are not only providing helicopter transport for troop units, but also are intent upon securing adequate fixed-wing air transport, not only for airborne forces (which have their own organic transport aircraft), but for *all* troops. Major General Pokrovsky has noted that, in nuclear warfare, "the perfection of transport aviation will enable the development of the airborne troops and significantly increase the maneuver potentiality of [all] troops, permitting the conduct of operations in great depth, swift creation of superiority in forces in the main sectors, and also the reinforcement of troops on those sectors where an unfavorable situation has developed." Again, too, the Soviets have demonstrated their active research effort to meet this recognized requirement. The most significant step has been the design of a new large turboprop assault transport, publicly unveiled in June 1956. Also, the expansion of the civil air fleet, now headed by Chief Marshal of Aviation Zhigarev, clearly has the purpose of providing an adequate reserve transport fleet for war as well as expanding the civil air service. Soviet air transports like the TU-114, the Ukraina (an enlarged version of Antonov's assault transport), and the IL-18 Moskva, are directly based on military types. But more important than this design-economy, they are also aircraft readily convertible to wartime military personnel and freight uses.

Mobility is the keynote for forces in the field. Other considerations must be met for strategic dispersal of permanent stations. Most supplies can be pre-stocked, but providing power supply for isolated military installations and forces is a problem. For this purpose, according to Major General Pokrovsky, "the possibility of atomic electric stations at naval bases and fortified areas, etc., deserves serious attention." Engineering preparation, the increased importance of which we have noted earlier, is of course also especially applicable to efforts at "atomic-bomb proofing" submarine pens, airfields, and the like.

Role of air forces

There has been some divergence in Soviet published estimates of the vulnerability of airfields. One air officer, writing in late 1954, stated that it was difficult to knock out airfields with atomic bombs, while another airman wrote in 1956 that "at the present time there is no more vulnerable military target than a present-day airfield with armaments and aircraft disposed in a limited area." From these and other discussions, it is clear that the Soviets recognize that airfields are vulnerable, but that certain "hardening" measures can be taken to reduce vulnerability considerably. But even in 1957, discussions continue to refer to the problem primarily in terms of the danger from a nominal 20-KT atomic bomb.

Tactical air delivery of nuclear weapons is described primarily, but not exclusively, in terms of interdiction and counter-air missions. Targets mentioned include airfields, "large concentrations of troops and matériel," bridges, and command and communications centers.

It is useful to recall that the major part of the Soviet air forces remains assigned to *support* of the ground forces. In all, about two thirds of the Soviet's military aircraft are assigned to support (including the airborne forces' transports and naval aviation). A little more than one half are assigned to the Frontal Aviation, equivalent to our Tactical Air Command. The importance of the Long-Range Air Force, and that of the fighter component of the joint Air Defense Forces (headed by a ground-force marshal) has increased significantly. But this increased importance of strategic air defense and offense has not been permitted to develop at the expense of the large, modern tactical air force with its jet fighter, attack, and light bomber aircraft.

Soviet discussions have not been very informative on the tactical employment of atomic artillery and missiles. Missiles, including even "long-range ballistic rocket weapons . . . of operational and strategic types," according to Colonel General of Artillery Fomin (1956), are said to "constitute a form of artillery," in addition to "atomic [gun] artillery" and conventional artillery, and to mark "a new qualitative leap in the development of artillery." But conventional artillery

pieces "still have many combat missions on the contemporary battlefield which cannot be accomplished by atomic weapons and the implementation of which by atomic weapons would not be expedient."

In the Soviet armed forces, each component is viewed in terms of its *mission* requirements, and assigned the appropriate weapons. Under this approach, the Ground Forces artillery component has been given all field artillery rockets and missiles up to and including junior IRBM's of 900 miles' range. The Naval Forces have been given submarine-mounted surface-to-surface missiles with ranges up to 750 miles. The question of assignment of the IRBM's (1200-1800 miles) and ICBM's (3,500-5,500 miles) is not fully established. A new long-range rocket artillery force is probably being established, and will in the future be joined with the present Long-Range Air Force in a new military service: the Strategic Striking Force.

Such a "mission" orientation is seen in the presently existing air defense forces, which is *coequal* with the Ground Forces, Air Forces, and Naval Forces within the unified Ministry of Defense. The Air Defense Forces, which has radar specialists, antiaircraft artillerymen (conventional and rocket artillery), and fighter-interceptor aircraft is not a "joint" Army-Air Force command, but an integrated service. The same will probably be true of the future strategic force combining manned and pilotless long-range aviation, IRBM and ICBM rocket artillery and probably some submarine-launched IRBM's as well.

The Soviet's traditional emphasis on operational and strategic reserves has been heightened by evaluation of the requirements for nuclear warfare. We have noted the Soviet belief in the continued need for a large ground army. This belief is tied directly to the need for reserves to replace the heavy losses anticipated from enemy wide-scale nuclear attacks. The most revealing statement of this view was made in late 1956 by Lieutenant General Krasil'nikov of the General Staff, when he declared that nuclear warfare "calls not for the reduction in the numbers of various divisions of the combatants, but for their logical further increase, since the threat of wiping out of divisions grows, and for their replacement large reserves will be needed."

Strategic concepts

So far we have surveyed Soviet indications of operational planning and training for tactical nuclear warfare. As one Soviet general noted as early as 1955: "All the combat preparation of the troops is now permeated with the task of creating an army for the conduct of atomic warfare." The extent of modification of doctrine on the field employment of the combined armed forces has to date perhaps not been drastic, but it certainly has been significant. The increased attention to mobility and dispersal adds impetus to Soviet efforts to be more selective in the employment of the principle of Mass. The greatly increased firepower of present Soviet weapons and units—even aside from atomic weapons—makes this feasible. One additional aspect of the change is the need for greater initiative at all command levels. The reduced role in recent years of political officers at the lower levels is intended, in part, to instill greater responsibility and initiative in company- and field-grade commanders. Marshal Rotmistrov has been most explicit in noting the need for greater initiative in modern battle. In *Military Thought* (February 1955) he wrote: "In future war, in which the situation will doubtless be distinguished by its dynamic and sharp changes, it is very important that military commanders at all levels and ranks be able to take audacious and bold decisions. . . . Great independence in the operation of troops will be required, without looking back on neighboring units, without the presently usual elbowing of neighbor units." This requirement presents certain particular difficulties for the Soviet Army. It has not yet overcome some of the various influences which marked its past record in this respect as a poor one. Nonetheless, the combination of senior commanders who displayed initiative during World War II, and of new junior-officer cadres who are being given a somewhat greater opportunity to master the demands of initiative than was allowed their predecessors in the thirties and forties, may reduce the problem to manageable proportions. It is unwise to *rely* upon past Soviet weaknesses in initiative, though they probably do not now match the initiative standards we require in the American professional officer.

The Soviets conclude that "troops that are well trained in anti-atomic and anti-chemical defense can successfully execute any combat mission." Preparation for tactical nuclear warfare extends to training the troops, developing corresponding doctrine, and of course procuring various forms of mobile weapons, transport, and means of communication. Tactical aircraft, mortars, artillery and rockets capable of delivering atomic warheads have been disclosed and form part of the continuing re-equipment and modernization of Soviet ground, air and sea forces.

Preparing for tactical nuclear warfare in no way reflects irrevocable decisions on the use of nuclear weapons. However, it is true that in *any* future war the constant danger of *possible* use of atomic weapons will require "nuclear-ready" forces on the battlefield even if a mutual restraint on the employment of such weapons is exercised. The Soviets intend to be prepared.

In the thermonuclear era, the army remains the major component of the Soviet armed forces, though without its former predominance. The basic reason is that the Soviet strategic concept continues to hold that the primary objective of military operations is destruction of the enemy's military forces and the seizure of his territory. While they have not yet solved the problem of ultimately overcoming the United States, their army is being groomed for the mission of overrunning the Eurasian continent, overcoming all resistance in the face of tactical nuclear opposition.

Soviet Army Weapons Are Modern

The American observer cannot fail to see that the Soviet Army has weapons and equipment which are fully equal to what we have been developing, and some which are actually superior

MARK S. WATSON

THE overwhelming priority which has been granted the development and production of missiles, notably the IRBM, is inevitable and desirable. But no first priority can be so stupendous as to exclude totally other defense requirements from a nation's thinking. Two major developments force that fact to attention.

The first is the bland assurance painfully apparent in Washington that, while expedited delivery of the big missiles and certain other items may well call for a sizable addition to defense expenditures, savings can and will be effected in "other" defense areas. The "other" areas are generally taken to be the "conventional" weapons and equipment and the forces using them, and most conspicuously the Army.

The other development, in startling contrast, is the detailed report, with photographs, of the annual armed forces parade in Moscow on 7 Novermber. The Soviet Army, undiminished in size, is revealed today not as subtracting from its strength, but adding numbers of new weapons and new equipment devised to provide greater firepower, greater mobility, and greater flexibility. The Soviet's excellence in missiles no longer seems to call for comment; the public demonstrations of large technological achievement speak loudly and clearly enough. But the prime new need for missiles never blinded Moscow to the enduring need—also very high in priorities—for the ground forces' own requirements. Accordingly, the Soviet Army is not being merely maintained at strength, but radically endowed with a host of new weapons, freely and significantly exposed to the world's view in the Moscow parade.

Mark S. Watson, dean of the Pentagon press corps, has been a member of the Washington bureau of the Baltimore *Sunpapers* for many years. During World War I he served at GHQ, for a time was officer in charge of the original Stars and Stripes, and was discharged as a major of Field Artillery. During World War II Mr. Watson was a war correspondent, and in 1945 earned the Pulitzer Prize for international correspondence. He was a member of the Wedemeyer Mission to China and Korea in 1947. He wrote *The Chief of Staff: Prewar Plans and Preparations,* a volume in the official history of the U. S. Army in World War II.

Standardization of small arms at 7.62mm has produced two versions of the submachine gun. The one at the left is the standard issue and the one at the right is the armored force version whose only apparent difference is the folding stock

This means, beyond dispute, that the USSR expects (as do our own Army chiefs) that extremely powerful ground forces will be required in any coming conflict, whether it be an all-out nuclear war, a localized war using conventional weapons, or another of the nibbling aggressions at which the Reds are adept. The Soviet military chiefs expect it—and so do the governmental chiefs, who act accordingly.

With the new weapons, necessarily, go new tactics suited to them, and in all probability organizational changes to permit better employment of the weapons and the tactics. Looking at the Moscow parade photographs, and reading the text of technical discussions, the American observer cannot fail to see that the vast Soviet army of 3,200,000 men, with its 175 infantry and armored (mechanized and tank) divisions, now is receiving certain items which are fully equal to those the United States Army has been developing, and others which are actually superior.

There is one important and painful difference: The American equipment in many cases has been developed but not produced. The Russian equipment is so clearly in the hands of the using forces that it was cheerfully rolled along the parade route before the very noses of the Western nations' military observers, or readily exposed to examination elsewhere.

The new T-54 medium tank, mounting a 100mm gun, continues the strong line of competent Soviet armor

A surface-to-surface missile of about 15-mile range, mounted on a light-tank chassis. This chassis is also used for the Soviet Army's amphibious armored personnel carrier and possibly other missiles and weapons

Here are some of the new items, most of them actually in the hands of the Russian ground forces, some (as noted) close to possession by the using troops:

- ¶ New guns and howitzers up to 203mm. The 203mm is an extremely mobile type which replaces in firepower the 1931 siege howitzer. But whereas the 1931 weapon could be hauled at three miles an hour, the 1957 model moves at thirty miles.
- ¶ Mortars up to 240mm, judged to possess a range sufficient to warrant their use of tactical atomic warheads.
- ¶ An extremely light 85mm gun which was drawn by a motorcycle. This of course is not a normal team-up for the road; it was used in this case to demonstrate how readily the piece can be moved in the gun park for loading into a cargo plane or an amphibian truck.
- ¶ Entirely new antitank guns, light, often recoilless, usually employing shaped-charge ammunition which observers calculate as able to pierce 12 to 14 inches of armor.
- ¶ Self-propelled 57mm guns weighing but 4.5 tons and hence readily movable not only in the Russian Army's new heavy-duty helicopter but in what the Soviets regard as the medium sizes, although larger than our own heaviest.
- ¶ A self-propelled 12-inch recoilless gun of surprising mobility.
- ¶ Full-tracked 240mm rocket-guns with calculated range of five miles.
- ¶ Several missile types with ranges of 10, 50, 150, and 350 miles, as judged by technicians who were allowed to examine their size and the tail-vane design. (Some impressive missiles of still longer range, entrusted to the Russian ground forces—again in contrast to present U. S. Defense Department policy—will be mentioned later.)
- ¶ Heavy tanks to replace the respected heavies of World War II pattern. These carry a 122mm gun and heavier armor than formerly, but they move more rapidly than the earlier model and also have a 140-mile range without refueling.
- ¶ This same high degree of cross-country mobility is observed in the new tracked, armored personnel carriers which have replaced the old wheeled vehicles; they apparently have a 165-mile range, enabling armor personnel to keep pace with the tanks in rapid movement.
- ¶ Assault long-range transport, using the same diesel engine which the Russian Army employs as standard for fifteen different pieces of equipment. The diesel itself is of marked efficiency, observers asserting positively that it permits a Russian tank to go a mile on a gallon, as compared with a somewhat similar American tank's requirement of five to six gallons to the mile. The economic reasons for America's relative neglect of the diesel are so well known that the matter calls for no remarks here, beyond pointing out the Soviet superiority in range attainable without refueling, a matter of great significance in armor operations.
- ¶ Assault amphibians propelled by hydro-jet (taking water in at the bow and expelling it forcefully from the rear),

This weapon of approximately 300mm, mounted on a heavy-tank chassis, has no apparent recoil mechanism. It may fire a ram-jet rocket-assisted projectile

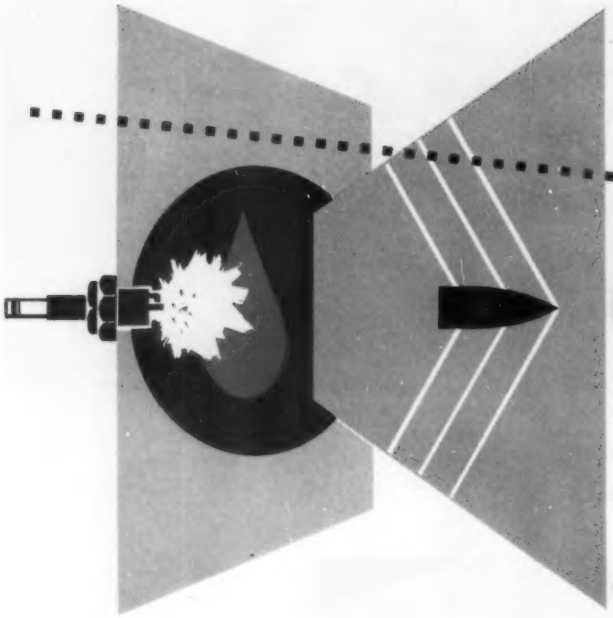
Another weapon of approximately 300mm and also mounted on a heavy-tank chassis. However, this one has a conventional recoil-counterrecoil mechanism

and quick-assembly bridging equipment indicating Russian concentration on the attainment of field mobility, in this case for river crossings.

- ¶ Standardizing of small arms with 7.62mm caliber, providing identical ammunition for rifle, squad light machine gun and submachine gun.
- ¶ Two very large guns, one of them without recoil mechanism and probably using rocket propulsion, whose exact purpose is not yet clear. At a distance their bulk is suggestive of the American 280, but they prove to be much lighter.
- ¶ A giant helicopter, not yet in production, but fully proved in the prototype exhibited. It has a 27,000-pound payload (the largest in the U. S. Army carries 7,500 pounds). Here is a most impressive leap forward in that ability to move personnel and decidedly heavy matériel toward which our own Army chiefs have been trying to progress, with far less success.

These examples—for the list is not complete—are enough to demonstrate the extent to which the thinking of Soviet Army chiefs coincides with our own. But in the case of the Russians, as earlier remarked, there also is a realization of plans such as most unfortunately is not duplicated here. These Russian birds are in hand, not in a defeated budget.

They are so much in hand that the Russian stockpile of items in readiness is reported as adequate for the support of a 300-division army (satellite and reserve divisions added to the 175) for six months. This provides its own evidence that, whatever the talk of an atomic war being a short-lived affair, the Russian planning is for war of whatever character, to be conducted on a grand scale of ground force deployment and to continue for a long season. Both General Maxwell D. Taylor, Chief of Staff, and Lieutenant General James M. Gavin, his research chief, have repeatedly presented the view that, whether it be atomic or limited war that comes to pass, the unmistakable need will be for very mobile, very flexible, very powerful ground forces in numbers and for a prolonged period. Apparently Marshal Zhukov and his successors have been guided by similar concepts, but their planning has encountered more receptive ears and fewer budgetary controls. This sort of army modernizing, on a large scale and with unquestionable efficiency, comes about only by extended study and great application, blessed by adequate authority and adequate funds over a period of years unbroken by spasms of "economy."



HANDGUN OF THE FUTURE

How would you like to have a handgun that could fire one hundred rounds without reloading? Liquid propellant may produce it

CAPTAIN GEORGE C. NONTE, JR.

PROBABLY no other period saw as much development in weapons as the last half of the nineteenth century. The designs from hundreds of minds embodied all the basic principles of today's weapons and ammunition. Everything in the shooting world of today, from the farm boy's single-shot .22 to the elephant gun and the machine gun were developed during that period. What we use on the range, in the woods, or on the battlefield are only refinements of the small-arms designs of that period.

Yet during this era of development little thought was given to the basic fact that the firearm is essentially a single-cylinder internal-combustion engine. The idea through the years that followed seems to have been that since our grandpappies propelled slugs out of barrels with the aid of liberal helpings of powder, that is all we need now. So we stick to the conventional cartridge that has all the components for firing a round neatly wrapped in a shiny metal package. Neat and handy though it be, it is the weakest link in the chain of actions that fires a bullet.

Let's look at our cartridge case, which represents half the cost of the round. It is longer and thicker than the bullet, and usually weighs as much or more; yet it serves only as the container for the components that make up a round. If the case and its big powder charge and primer were eliminated, you could store a year's supply of ammunition in a fraction of the space now required. To fire such a round, the shape and functioning of your rifle would have to change drastically. Not feasible, you say? Let me show you that it is.

Captain George C. Nonte, Jr., *Ordnance Corps,* is Assistant for Inspection Activities to the commander of Rock Island Arsenal. He has served as an enlisted man in the Air Corps and Medical Corps, and as an officer in both Artillery branches. He attended the last three National Matches both officially and as a competitor.

One-hundred-round repeater

Pick up tomorrow's rifle with its short receiver that looks just a bit different from yours. If it seems a bit thicker in spots, that's because this is the 100-shot model. There's enough liquid propellant in the tank inside the stock to fire a hundred full-charge rounds. No ejection port or other openings to let in dirt; just one small magazine recess. The small, disposable magazines are the size of a matchbox, and each holds ten 130-grain .270 bullets. Ten magazines and you're ready for a hundred shots with no pack sack needed for carrying ammunition. Slip in the magazine and you're ready to go. With the magazine in place you can toss this rifle in the river, fish it out in an hour or so, and it will fire immediately. Everything is completely sealed, even to the muzzle with split cap that opens just before the bullet reaches it.

Ignition is supplied by a mercury battery or even one of nickel cadmium about the size of the familiar hearing-aid battery. Either type should last about a year—more than long enough for weapons use. Failure can be forestalled by scheduled preventive maintenance. Besides the battery, a thimble-size capacitor and an ignition coil like that on a miniature gasoline engine

would be needed. This combination plus proper circuitry could provide more than 100,000 volts when the trigger, acting as a switch, is pressed. The charge ignites the propellant through a close cousin of the common spark plug. All these elements and the necessary printed circuit are easily housed in the stock.

When you squeeze the trigger a charge of propellant fluid is injected and ignited by the electrical system, the bullet is fired, gas pressure recocks the injection and feed mechanism, and a fresh round slips into the barrel. You're ready to pull the trigger again.

Of course, there is a lot more to it than this description indicates, but basically that's how the gun works. As for maintenance and cleaning, you merely run an oily patch through the bore occasionally. The action is sealed and permanently lubricated. After a few thousand rounds the gun may need servicing, but the factory can do that for a nominal charge. For recharging with propellant, you get two tanks with the gun. When one empties your dealer exchanges it for a full tank from his stock. You're always ready, because they slip right in and lock in place.

The only handloading you need do is to exchange bullet weights, so you might look for a buyer for your tools before the bottom drops out of the market. This gun is not on the market yet, but it could be any day.

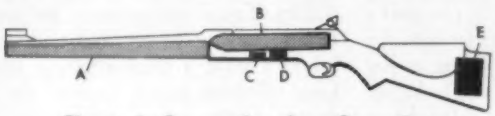


***Figure 1.* Conventional configuration**

A—Propellant tank
B—Propellant injection system and igniter
C—Magazine in use
D—Spare magagine
E—Ignition system (battery, coil, capacitor) connected to igniter

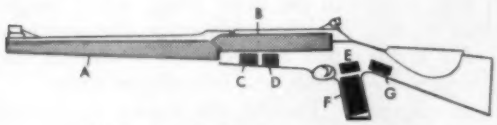


***Figure 2.* Alternate configuration**

A—Propellant tank
B—Propellant injection system and igniter
C—Magazine in use
D—Spare magazine
E—Capacitor
F—Battery
G—Coil

Use of light metal (titanium) and plastics would make it possible to keep the weight under 9 pounds.

HOT SPARKS

A special lightweight, tubular aluminum, suspension Jeep seat has been designed for the Detroit Arsenal by the Bostrom Manufacturing Company. More than fifty per cent of the shock and vibration normally transferred to the operator is removed by the new seat, which is of deck-chair type construction with a canvas hammock, which contours to body shape, for the seat and back construction. It weighs about 18 pounds. In a small compact box to the rear of and under the canvas seat is an adjustable rubber torsion spring and lever arms which act as "knees" taking up all the jolt and jar before it reaches the driver.

Republic Aviation Corp. has formed a separate helicopter division to handle production, sales and services of the French jet helicopter, Alouette II.

The first Missile Master installation became operational at Fort George G. Meade, Md. The electronic system, developed by the Army's Signal Engineering Laboratories with The Martin Co., will control and coordinate the fire of the Nike missile installations protecting the Washington, D. C.-Baltimore area.

The Army's Iroquois helicopter is undergoing Phase III flight testing. The turbine-powered craft, built by Bell Helicopter for Army utility service, is known as the XH 40 but will later become the HU-1.

A gyro-compass field instrument which automatically determines true north with remarkable accuracy, saving time, manpower and equipment, has been developed by the Autonetics division of North American Aviation, Inc. Designated ABLE (Autonetics Base Line Equipment), the portable direction-finding device operates in all weather, day or night. Aiming and calibration problems normally can be solved by inexperienced persons in less than 30 minutes at 30 degrees latitude or one hour between 60 to 70 degrees latitude.

The Army Quartermaster Corps is developing an emergency, low-level parachute for the pilots of flying platforms.

An airborne electronics van made with strong, lightweight, insulated plastic wall panels has been developed for the Army Ordnance Corps. The Hupp Mobile Van, XM 203, weighs just over 9000 pounds, is 30 feet long, 7 feet wide, and 7 feet high, with an increased interior capacity of 137.5 cubic feet due to the special thin wall panels, and can carry 3000 pounds more than conventional vans. Designed to house and transport electronic fire control equipment the van is adaptable to almost any use, including refrigeration.

Cessna Aircraft Co. recently produced its 3,000th L-19 observation and liaison plane. The aircraft first went into production during the Korean conflict.

A special black-background screen for radar eliminates the problems encountered using such equipment under bright lights. Developed by Allen B. Du Mont Laboratories, the special screen overcomes the tendency of high light levels to "wash out" the image on a cathode-ray tube screen due to the absence of contrast, and provides clear viewing.

The Army now has a 100-inch, infra-red, ground reconnaissance camera that takes sharp pictures at a range of thirty miles. Built by the Kalart Co. for the Signal Corps, the camera's infra-red factor enables it to operate through fog and overcast.

THE MONTH'S CEREBRATIONS

GIVE THE BATTLE GROUP A PUNCH

MAJOR RAYMOND H. ROSS

Our official publications and news releases loudly proclaim that the new pentomic infantry organization gives us much more firepower.

The foot soldier must have the greatest cross-country mobility. Any combat leader will tell you that when you burden the foot soldier with too much weight, infantry becomes a stagnant defensive mass.

The addition of the 106mm recoilless rifle and the 81mm mortar is supposed to have given the infantry company more firepower. However, every experienced infantryman sweats in his boots when he thinks of all the places the heavy, truck-carried, clumsy 106mm RR can't go.

Even though the 81mm mortar and its ammunition are considerably lighter than the 106mm RR, the truth is that when the infantry company takes off across country where wheeled vehicles can't travel, it doesn't take long for the assault platoons to outrun their 81mm mortar support.

Here is how it stacks up: Because of their weight, the 106mm RR and the 81mm mortar and their ammunition are not practical for hand-carry through jungle, mountain, arctic, or marshy terrain—*the most likely places for infantry to be committed.* This means that the infantry company must move over such terrain with less organic firepower than it had in World War II or Korea.

There are two simple solutions. Bring back the 60mm mortar and the 57mm RR. These can be hand-carried across country. When the infantryman stops, he must dig to survive. He can pull a 57mm RR or a 60mm mortar into the hole with him (imagine trying to lug a 106mm RR in after you). When the enemy bombardment lifts, he is ready, with his support weapons, to do battle. Certainly American ingenuity could provide a tank-busting 57mm round, and past failures be damned.

The assault gun platoon has a fierce, offensive sounding name but actually little bite. Few sane people will dash out to tackle a tank with their trusty jeep and 106mm RR; neither, for that matter, would the crew of a highly touted 90mm SP Gun (Scorpion, formerly SPAT) relish such an engagement. At best, these are defensive weapons.

Intelligence indicates that the USSR relies greatly on the tank-infantry team, with stress on armor. World War II and Korea proved that the best antitank weapon is another tank. While the Soviets continue to build and maintain offensive strength with tanks and other armored units, the trend in the U. S. Army is toward a defense employing road-bound thin-skinned, AT weapons like the 106mm RR or the Scorpion. The airborne concept of being air transportable with the ability to hit, run, or hold for three days, is valuable in special operations, but we should not forget that the one great factor which makes an army the dominating force in war is its ability to *stay* on the battlefield under *all* conditions. Tanks are necessary for maintaining staying power, and tanks and infantry make a great offensive team. Give offensive punch back to the infantry battle group commander by equipping the assault gun platoon with tanks.

To sum up, two serious weaknesses in our pentomic infantry organization need instant correction. In the company, where weight is a hindrance, the organic support now provided is much too heavy and road-bound. Secondly, in the battle group, where weight is a definite advantage, the organic support now provided is woefully inadequate, and defensive in nature.

Finally, the theory that heavier guns in the company provide it with more firepower is wrong (except under ideal terrain conditions). So is our concept of the battle group's assault gun platoon, for it is actually armed with defensive weapons.

Major Raymond H. Ross, Infantry, *was an enlisted man for three and a half years before being commissioned in 1942. He was integrated into the Regular Army in 1946, and has served as platoon, company and battalion commander. Major Ross is S3, 1st Battle Group, 35th Infantry. He wrote "Snipers in the Jungle" in the March 1949* Infantry Journal.

HE'S *YOUR* CHAPLAIN

CHAPLAIN WILLARD M. JUSTICE

Do you really know where you stand with your noncommissioned officers?

Do you know why Lieutenant Smith is resigning and why Master Sergeant Jones won't re-up for your outfit?

Do you know why Captain White has suddenly become inefficient and Sergeant Green has begun to hit the bottle?

Do you know why morale in your outfit has hit the skids?

The answers to these questions (and many more) are usually known by your chaplain. He is a unique person in your command. Few doors, if any, are barred to him and he moves with relative ease through every stratum of military life.

Let's look at him. In almost every case he is a college graduate with three additional years of seminary work. He

has been active as pastor, priest, or rabbi before coming into the service, and is professionally competent to minister to and to counsel you and your men. He has volunteered for military service because he has a special sense of mission to his God, his fellow men, and his country. He has been carefully screened for fitness by his church or congregation.

Your chaplain's primary mission is to act as spiritual advisor to you and your men. His job is to help raise the sights of your men so that they will aim at better targets in life. As with all other officers, he has additional duties which are not cut into orders, but are implicit within him. He can be your personal friend without arousing petty jealousies among his colleagues. When things weigh heavily upon your shoulders he can give you a spiritual lift.

Your chaplain is not a spy, but his constant visits among men of all ranks let him discover sore spots which may be the source of courts-martial, low morale or inefficiency. In numberless intangible ways he can boost morale. His mere presence among the troops along with a laugh, a joke, or a serious word can often do wonders. His conduct in combat can bring home to the men of your command that life is not all, but that there is something beyond it as well.

The emphasis today is on machines and the basic good character of the man behind them: quality, not quantity, is being demanded. The chaplain's primary mission of helping men to God, when fulfilled, will help you meet the quality demand.

The chaplain can lighten the load of the company or battery commander by helping with some of the men who are continual headaches. Sometimes he can discover why men are antisocial and uncooperative. He can help them find worthwhile goals which will turn them toward new paths.

No chaplain, just because he is a man of God, is perfect. Being human, he can make mistakes. If he is young, and inexperienced in military procedures, you owe it to him to make suggestions. Don't let a potentially excellent chaplain waste away in the oblivion of a chapel for want of a little direction. By regulation, he is your staff advisor on moral matters and morale, but you can help him to become more than that. He can become all things to all people with your help. He is *your* chaplain. Use him.

***Chaplain (Capt.) Willard M. Justice** was a troop transport chaplain during World War II, and has since served in various post and unit assignments. He is now with the 60th Infantry at Fort Carson, Colo.*

IMPROVE THE MARKSMAN *AND* HIS WEAPONS

MASTER SERGEANT
RUSSELL K. HAIGHT

There are a number of suggested methods getting more firepower out of fewer riflemen. Many of them seem wide of the mark. There are those who advocate issuing each rifleman an automatic weapon, adding a handful of snipers to combat units, with a few fast-drawing pistol experts for emergencies. Others suggest that in addition to issuing automatic weapons, we must teach our soldiers to "get the fire initiative; pour it on; keep the enemy's head down so that our assaulting elements can close with and destroy him." The increased firepower is supposed to enable one soldier to do the work of ten.

Studies by General S. L. A. Marshall and groups of psychologists covered the problem of why a high percentage of men fail to fire in combat. The answer appears to be one of filling small, compact battle groups with well-fed, college-trained, middle-class recruits. With the new weapons, they should do the job.

While these studies have some merit, I think they ignore the basic problem. There is nothing seriously wrong with our weapons or with our former organization. The sorry fact is that a large percentage of our soldiers, no matter how well armed and organized, wouldn't fire their weapons anyway. Why? The answer may be shocking, but is simple too: our men don't shoot because they don't think they can hit the target. They lack that confidence because the Army has not properly trained them in marksmanship.

During basic training, a recruit gets from six to seven days of marksmanship training, during which he fires for only six or seven hours. The only way a man becomes a good shot is through good coaching and constant practice. Our recruits get neither, and units fire for record once a year. The coach-and-pupil system is fine—when the coach knows what he is doing. But when an inexperienced shooter coaches another beginner the blind are leading the blind.

> This department is designed to accommodate the short, pithy and good humored expression of ideas—radical and reactionary, new and old. We pay for all contributions published but you deserve to be put on notice that the rate of payment depends upon the originality of the subject and the quality of writing rather than length. This department is hungry for contributions, so shoot that good idea in . . . today.

Some unit commanders, anxious to look good, use the M1 pencil. On paper the whole unit qualifies with a high percentage of experts. S3 may be fooled, but the *soldier* knows whether he made expert or not. His attitude toward marksmanship reflects that of his superiors, and that attitude will carry over into combat. In 1952, while passing through Japan to Korea as an infantry replacement, the soldier was given a weapon he hadn't seen before and was allowed to fire only five rounds on the range. That was supposed to have zeroed his piece. This "zeroed" weapon was taken from him when he arrived in Korea, and at the MLR he was issued another M1 or a carbine. Is it any wonder so many men didn't fire? To cite another case, a high commander in Europe, alarmed at the poor marksmanship of his troops, ordered the zero of all weapons taped to their stocks. Clerks worked overtime typing up slips of paper which were duly affixed, but the weapons were never fired.

In my opinion, the Army tacitly admitted its failure when it replaced the M1 with the M14. If a soldier has a fair chance to hit a target with eight rounds, does he have a better chance with a twenty-round magazine that can be emptied by moving a lever and holding down the trig-

ger? Any combat veteran can tell you how difficult it is to keep a rifleman supplied with M1 ammunition. Instances could be cited where weapons company troops were down to one clip per man so that the rifle squads could be kept supplied. With general use of the M14, how are we going to resupply?

We don't need an army of intellectuals. Educational background and AFQT scores have little to do with a soldier's combat potential. His effectiveness depends upon his training, morale, and the leadership he gets. We must get soldiers out of the classroom and the steam-heated barracks, and bivouac them on the range. Keep them firing at the different ranges and combat course with live ammunition until they thoroughly qualify with their own *personal* weapons.

Fire for qualification more than once a year, but be sure scores are honest. If necessary, use troops from other units in the pits. Reward good shooters with extra privileges like three-day passes or even extra pay. If highly burnished boots at guard mount are worth a three-day pass, why not the company's top ten shooters? If we can afford extra money for technicians, we certainly should give our fighters extra pay too. Wars have been won without missiles, but never without topnotch riflemen.

A soldier trained to shoot well *will* fire when the chips are down, whether he finished college or never made the seventh grade. The fire of a company of good marksmen, well emplaced, can decimate a regiment. What's more, it may have to. Increased firepower is fine, so long as it is not wasted. You can't frighten the enemy with it; it must kill or wound him. While it cannot be classed as a sniper weapon, the M1 has proved its lethality in two wars and its accuracy in countless matches through the years. It may not core an apple at a thousand yards but it can disable a man at that range. A wounded soldier is more expensive than a dead one, and no matter how callous the enemy's attitude toward expenditure of life, his wounded must have attention; they need transport and consume rations.

Let's not stop improving our weapons. But until the pocket death ray is issued, let's teach our soldiers to use what weapons we've got.

***Master Sergeant Russell K. Haight** is small-arms instructor at LaSalle Military Academy. He served in the British Army and in the U. S. 29th Division in World War II. During 1947-48 he was Brigadier of the Azad Kashmir International Brigade in Jammu and Kashmir, and in Korea, a platoon sergeant. A certified NRA marksmanship instructor, he has had ten years' experience as coach and firing member of Army rifle and pistol teams.*

FIELD ARMY COMPTROLLER

MASTER SERGEANT RALPH E. BUNNELL

WHEN Lieutenant General Manton S. Eddy reactivated Seventh Army in 1950, he directed that a comptroller section be part of army headquarters, even though TOE did not provide one. His action was based upon his appreciation of the increasingly important role of the comptroller in a modern army.

This section still exists in Seventh Army. Its survival for seven years in a combat-ready unit, under several of our most competent commanders, is evidence that its services are essential. Whether we like it or not, comptrollers will soon be needed in field armies, and possibly also in smaller units.

For the past ten years there has been a steady trend toward increasing the activities of comptrollers at all levels. The fact that we fought World War II without comptrollers is no longer accepted as a valid argument against them, for it is now generally recognized that an extravagant and unnecessary waste of money, matériel and manpower occurred during that war. Although we won without comptrollers, it was because the tremendous rate of consumption was accompanied by a more tremendous (and expensive) rate of production. Even so, the increasing consumption rate was causing grave concern by 1945, and our political and military leaders realized that our resources were not unlimited.

Technical advances since then have multiplied our ability to consume our resources (and also the enemy's ability to destroy them), and their management could easily be the deciding factor in a future war. Management of resources is no longer only a matter of saving the taxpayer's dollar. His freedom also may be at stake.

Although the comptroller is usually connected with money, his broader responsibility is the management of resources—money, matériel and manpower. Although it often appears otherwise, money is the least important, even though it is the yardstick that measures the other more important resources.

It might be argued that the management of these other resources is already the responsibility of existing staff officers (G4 for management of matériel and G1 for management of manpower). To some extent this is true, but the field army G4 is primarily concerned with getting and distributing the supplies. He is only secondarily interested in conserving them. His interest becomes serious only when local shortages occur and threaten to reflect upon his ability to perform his primary job of getting and distributing.

Similarly, the army G1 is primarily interested in getting and distributing personnel. Efficient utilization, until local shortages occur, is left to immediate supervisors, who also have primary interests which usually conflict with over-all efficient use.

With a limit to our total resources in sight, someone must be made primarily responsible for managing and conserving these resources at *all* times —not only when local shortages occur. A comptroller is the answer.

I do not mean that the comptroller should replace the general staff. On the contrary, a competent comptroller must manage his resources without infringing upon the traditional roles of other staff officers and without getting in their hair. A few competent comptrollers might have prevented the irresponsible attitude toward government property that developed during World War II. Many otherwise responsible officers reluctantly participated in this waste because then it was the smart thing to do, but mostly because no one was made primarily responsible for reversing the wasteful trend.

Getting back to the combat unit, and to a more specific definition of the field army comptroller's mission, there are several possibilities.

At one extreme is the Bendetsen Report to the Chief, Army Field Forces (now USCONARC), which recom-

mended comptrollers at all levels down to regiment and separate battalion, and visualized great activity by these comptrollers in collecting and making battlefield analyses of combat statistics. At the other extreme are the diehards who maintain that no comptroller is required—not even in the Pentagon.

A more realistic forecast of immediate future developments can be based upon the present Seventh Army comptroller's functions, and an estimate of their value in combat. This comptroller's principal peacetime activities are budget and fiscal, management, and statistics. Budget and fiscal activities do not belong in the forward area, and in combat should be in the rear. The wartime field army comptroller's job, then, appears to be management, statistics, and in general acting as a watchdog to assist the combat commander in preventing waste of matériel and manpower.

Without usurping the traditional roles of the other general staff officers, the comptroller should be able to provide valuable service to the G sections by centralizing and improving the collection and analysis of statistics. This would relieve them of much of their administrative burden, and allow them more time for their primary jobs.

The comptroller should also be primarily responsible for preventing any irresponsible attitude toward public property.

There is also the interesting possibility that American techniques of scientific management, work simplification, and the like, which have proved so valuable in increasing industrial efficiency, might be applied to the battlefield, to increase combat efficiency.

Finally, there is the field of combat statistics, as recommended by the Bendetsen Report. Our current manuals are based, for the most part, upon statistics of World War II and Korea, collated after the fighting was over. In using them we are studying past wars instead of preparing for the next. The report visualizes the peacetime training of specialist teams for collecting and analyzing statistics on the battlefield for the combat commander's immediate use. This would enable him to fight his current battle aided by accurate, current statistics, rather than depending upon statistics of a battle in some other war.

There is general agreement in the principle that improved management of resources must be achieved at all command levels. The question now is, how far can this principle be applied in combat units? The answer depends upon the ability of comptrollers to sell their services to combat commanders, and the extent to which they can serve without harassing combat troops or getting in the hair of combat leaders who are busy with their primary missions, which are paramount.

***Master Sergeant Ralph E. Bunnell** is currently with the Budget Division, Post Comptroller's Office, Fort George G. Meade, Md. As a major he served during 1954-56 as Executive Officer, Comptroller Section, Seventh Army.*

DON'T WASTE OUR E-7s

CAPT. ALVAN C. HADLEY, JR.

The present and probable future surplus of master sergeants requires some remedial action for controlling troop assignments. In many line companies one or more E-7 platoon sergeants may be getting a little old to climb hills or finish twelve-mile speed marches; a misassigned administrative master sergeant may be unsuccessfully trying to fill the shoes of a line platoon sergeant. A reorganization somewhere within the unit may have resulted in a sudden influx of surplus E-7s; master sergeants, filling company TOE slots on paper—slots adequately filled by hard-working and underpaid E-6s—may be doing the work of an E-4 on the pay of an E-7.

The Cordiner proposal for creating E-8 and E-9 will undoubtedly add a little pay and prestige to the First Soldier and the Sergeant Major. However, it does not solve the problem of surplus master sergeants and the replacement of aging E-7s. No doubt this condition will become more acute in the future with fewer promotions to E-7 and Father Time taking care of the rest. With the impending inactivation of "permanent" ZI installations, post assignments will correspondingly be curtailed.

A second inequity exists in some form in all units: continued diversion of junior officers into various quasi-staff assignments at higher levels. This practice, necessitated by administrative requirements, deprives many platoons of officer leaders, and officers of command experience. The administrative workload of a battalion, battle group or regiment—although considered nonexistent or minor—actually is immense. Articles in ARMY have pointed this out. I see no reason, however, why battalion or battle group officers must do jobs connected with courts and boards, athletics and recreation, clubs, public information, troop information and education, ranges, and so on. Most of these jobs have non-TOE titles such as assistant S1 or assistant S3. It is conceivable that the number of officers assigned to a unit's staff could equal the number of its troop commanders.

Why can't some or all special jobs and staff sections be headed by master sergeants? Why not recognize the need for these slots by creating TOE staff subsections? It's fine to operate "lean and mean," but in a small tactical outfit you realize the enormity of the administrative burden. Any job I have cited could be competently handled by an experienced master sergeant after a reasonable break-in. S1 or S3 could adequately supervise the special staff subsections, and the product, in the long run, would be no less polished. Several E-7 slots, in lieu of officer non-TOE spaces, could be created to alleviate the master sergeant surplus and the platoon leader shortage. Army-wide this could be significant.

It is needless to add that master sergeants should be given jobs commensurate with their experience and service, for we can ill afford to waste them. I think they would be glad to assume the increased responsibility. Placing the Army's top enlisted grade in these staff positions would increase their prestige. If an E-7 becomes "excess," some commander along the line has failed to equate his rank to his performance and ability. Let's be realistic and meet the problem head on. Eliminate a couple of inequities with one TOE change.

***Captain Alvan C. Hadley, Jr.,** Infantry, USMA 1946, was with the 187th Airborne Infantry in Korea and has commanded companies in the 1st and 8th Divisions in Germany. He also had a tour in the Pentagon from 1953 to 1956.*

'War on the Ground Remains the

SECRETARY OF THE ARMY, WILBER M. BRUCKER

Excerpts from the Secretary's opening statement before the Senate Preparedness Subcommittee:

WITHOUT in the least underestimating the threat of Soviet scientific achievement, another Soviet threat deserves attention at this time. It is the strong threat on the ground. No one who has read or heard about the November 7th Communist parade in Moscow could mistake the growing modernization of the Soviet ground army and its ability to fight a nuclear war. Our people should be sharply alerted to this threat. A nuclear stalemate becomes an ever-increasing possibility with the advent of nuclear plenty and more advanced technology.

Certainly neither nation will initiate a global nuclear exchange that would result in its own destruction. Limited war on the ground remains the most probable immediate threat to the security of the nation and its allies. We must give at least as much attention to the forces we are likely to use as we give to those forces which we hope never to use. I urge accelerated efforts to meet this threat in all of its manifestations.

The fact that Communist armies cannot reach our shores does not mean that those armies are not a threat to our survival. The United States has only six per cent of the world's population and depends upon outside sources for many of its strategic materials. It logically follows that our future and our fortunes are wrapped up in the welfare and security of our allies. It is precisely here that Army forces have a direct and unique function. If we did not have

WHERE ARE WE?

(Continued from page 18)

General Gavin said the Army needed a better family of tracked vehicles and improved tank engines. Our present tanks do not have the range of Soviet tanks, he said.

He asked for a better family of organic air vehicles and more tactical and strategical mobility.

Research and development funds for the Army which are about $355 million this year should be approximately doubled, he said.

He urged more action on the anti-missile missile. "We should have it quicker than we are going to get it."

Questioned by Senator Symington, he said the Army could use twenty-eight divisions, at least half mechanized and all backed by Army missile commands.

Need for medium-range SSM

Mr. Brucker, General Taylor and General Gavin all noted the absence from the U. S. missile arsenal of a medium-range (300 to 700 miles) weapon that could counter a similar weapon the Soviets had paraded in Moscow on 7 November. This weapon, as described by General Gavin, has a range of at least 350 miles. It and its launcher are carried on a track-laying prime mover, which gives it the mobility required of a field army weapon.

General Taylor said the Army has two plans for such a mid-range missile. One, he said, "derives from a scientific breakthrough on the part of our people at Redstone who now see the possibility of taking the Redstone missile itself and giving it greater range." The other, a "longer-range step," would be a "solid propellant missile of a very light weight which would have great mobility and also have extended range."

Mr. Brucker said it was "only logical that the Army should develop the capacity" for mid-range missiles in view of the requirement for such a weapon. "We are capable and competent to move into this range," he said.

New look at roles and missions

Since operational use of such a mid-range missile would be beyond the Army's authority under the roles and missions directive of November 1956, Mr. Brucker was asked about this. That directive, he answered, was issued "in the light of events of 1955 and 1956 . . . times have changed a lot since then . . . we feel that maybe a new look at that some day would be a good thing. . . . It is not pending at the present time. We have accepted it. We do not fight it or resist it. We are doing the best we can. But in the future as things come in, we feel that it ought to be reexamined."

Asked if he believed the Army has a fundamental part in developing ballistic missiles, Mr. Brucker replied:

"I most certainly and emphatically do. The Army has been in this business for many years now. Growing out of our natural artillery mission that began with ground-to-ground fire and later developed in the missile field, the Army has attained the competence that I think . . . is really a part of the deterrent strength of this country at this moment."

On the Army's role in air defense, he said:

"The Air Force does not have the operational control of the air defense from the ground. The Army has the firing of the ground-to-air Nike Ajax, Nike Hercules, and of course, the Nike Zeus when it comes. . . .

Most Probable Immediate Threat'

Army forces deployed or quickly deployed at any threatened point along the Iron and Bamboo curtains, the Communists could nibble away at the Free World with impunity.

We cannot withdraw to a fortress America, cock our long-range missiles skyward and abandon collective security. We cannot abandon, to the Communists, our allies with their vital lands, their industries, their scientific resources and their desire to be free. It would be a national suicide for this nation to retract its forces to the confines of the North American Continent where they, together with our people and our industries, would constitute an extremely vulnerable target.

Enemy forces moving unopposed on the ground, particularly under cover of darkness, can remain dispersed and mingle almost indistinguishably with civilian and refugee populations so that they are difficult to locate and nearly impossible to destroy. It is only when invading forces are opposed by Army forces on the ground that military targets take form and atomic fire power can become effective. This serves to illustrate the importance of the Army's role in a balanced, tri-dimensional force which is indispensable to victory.

The Army not only has a vital role now but, in my opinion, an increasingly important one in the future. I can only re-emphasize that the kind of military conflict which is the most probable in our time is the kind of conflict in which Army forces would play a leading role.

The Army is in its element in the fire from ground to air. . . ."

SENATOR Bush, observing that he was "a little surprised to find that the Air Force is building launching sites for missiles when it seems to me that that would properly fall into the responsibilities of the Army" asked Mr. Brucker if he "would care to comment on that? I do not ask you to," the Senator added.

"I do not think anyone should fail to comment on things, no matter how personally embarrassing they are to the service," Mr. Brucker answered. "In the sense that we do not want to stir up any controversies, interservice or otherwise, may I just say this about it: we do feel that historically and from the standpoint of readiness and from the way in which our men are trained, that technically, scientifically, from an engineering standpoint with the back-up of all these things—the ordnance and all the rest of our mobile concept—that we are ready and equipped to do that kind of a job and we would like to do it.

"On the other hand, we respect authority. We are good soldiers. When an order comes and they say 200 miles, that is it. You have not heard anything from us. . . . But the time has come when these events have caught up with us. It is all different, a new ball game. . . . We are now confronted with somebody who has outgunned us on our own field. I mean by that our field of being able to launch ground-to-ground missiles. And by missiles I mean the same as artillery extension in space and time. We feel very rightly, I think, that we do have the competence to do it."

"I do not want to suggest that we are starting a controversy with the Air Force over this," Mr. Brucker continued. "We are working as closely as we can with them, and in fact the Jupiter missile has been assigned to the Air Force to fire; we are willing to train their forces and to give them all the support we can. . . . Of course, they are not used to it. We realize that. But we are willing to overlook that and to help in any way we can . . . so long as the country gets the missile and gets it fired.

Army's role in the conquest of space

Mr. Brucker emphasized the need for a military space flight program in addition to the scientific program as represented by the Vanguard project. The Army, he said, "has a unique capability to make significant and early contributions in this conquest of space. It has not only the ability with existing equipment [Jupiter C] to begin launching small satellites almost immediately, but it has an incomparable reservoir of experience in rockets, guided missiles, ballistic missiles and space vehicles.

General Gavin said that the space satellite is "perhaps the most significant thing of our times." He urged that it be given a higher priority than guided missiles. He explained that he did this because if we could get up a satellite we would have the engines for our missiles. "We are on the point now where we had better get out on the curve of progress, very, very far out, and it means getting out on satellites as fast as we can. . . ."

We can do it

Grim as the picture is, it is not hopeless.

"Do you think," Senator Stennis asked General Gavin, "our capacity is great enough to overcome any superiority the Soviet Union may now have?"

"Unquestionably," was the reply. "If we really put our minds to the problem and our resources into it, we can show daylight between ourselves and the Russians."

Irons in the Fire

Hard Riding

How much shock and vibration can the human body take? The Office of the Surgeon General is trying to learn the answer to this question through a research study contracted with the Bostrom Research Laboratories in Milwaukee. Using a chair mounted on a mechanical vibration table which can duplicate the frequency and intensity range of Army vehicle vibration, the study will measure human reaction to vibration up to the so-called "intolerable" limits, with particular attention given to the impairment of performance of the eyes and muscles.

Do-It-Yourself Tools for Combat

Corps of Engineers' Research and Development Laboratories have developed a set of Do-It-Yourself tools for combat units, to speed construction of bunkers and similar emplacements in forward areas.

The trailer-mounted electric tool set is highly mobile and air droppable. It includes: a 3- or 5-kw, 60 cycle, 115-volt engine generator, which can be operated either in or out of the standard ¼-ton military trailer; two 10-inch circular saws; two 24-inch chain saws, one ¾-inch reversible electric drill; one ⅜-inch impact wrench; one electric hammer; one right angle sander; and two 150-watt lighting fixtures.

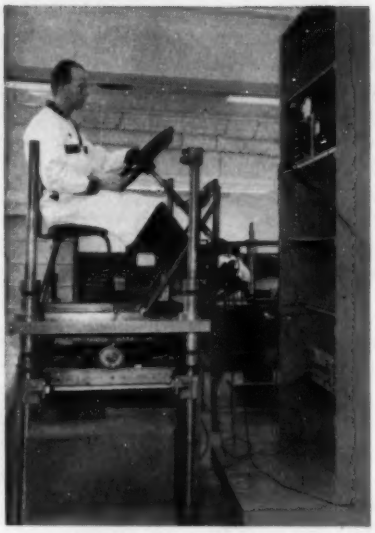
The set will be issued to Engineer Combat and Construction Battalion platoons and is recommended for Infantry unit use.

Powerful Push

The Army Redstone missile's liquid propellant rocket engine develops more than 75,000 pounds of thrust. A rugged, single-chambered system designed by the Rocketdyne division of North American Aviation, Inc., it was the first high-thrust (over 50,000 pounds) rocket engine to be placed in production (1952) in the United States. The latest model, sixth in the series, is only 10 feet 11 inches long and 5 feet 10 inches in diameter, and weighs less than 1,450 pounds.

New Cartridge Case

A light, low-cost plastic cartridge case has been developed which probably will replace the traditional brass case and the steel case used during the Korean war. Designed and successfully tested at the Naval Ordnance Laboratory, under an Army contract, the new cartridge case weighs less than half as much as the metal (the 105-millimeter case shows a difference of three pounds). Except for a steel base the case is made of styrene copolymer material by the conventional injection molding process, permitting its manufacture by many U. S. plastic firms.



Vibration test chair

Gas Turbine Tester

The first closed-cycle gas turbine test facility in the United States is under construction at the U. S. Army Engineer R&D Laboratories at Fort Belvoir. Information developed by this facility will be combined with that obtained from AEC's Gas Cooled Reactor Experiment to form the design basis of a mobile gas-cooled nuclear power plant for military use.

The test system will be built by Aero-Jet General Corp., and will operate on a regenerating closed cycle with nitrogen as the working fluid. An oil-fired heater will substitute for the nuclear reactor, heating the nitrogen to over 1000 degrees Fahrenheit so that it expands through a two-stage axial-flow turbine. The turbine, in turn, will drive a two-stage centrifugal-flow nitrogen compressor and an electrical generator to produce electric power. In the test facility this power will be dissipated through an immersion heater.

Various VTOLs

Ryan Aeronautical Co. has the "Vertiplane," a prop-driven sister ship to their "Vertijet." The Vertiplane is no tail-sitter, but a true level-lift airplane. On the ground, because of its extended landing gear, it assumes a nose-high position, but in all phases of flight it operates in the conventional, horizontal attitude. Employing the deflected slipstream principle the plane has double retractable wing flaps which extend far below the trailing edge of the wing and bend the two propellers' blast downward, providing vertical lift for take-off, landing and hovering. Vertiplane was designed to fill the Army's need for a medium-speed liaison, reconnaissance and utility plane with VTOL characteristics.

The XV-3, Bell Helicopter Corporation's tilting-rotor convertiplane, has successfully completed full-scale wind tunnel tests through 90 degree conversions and speeds ranging as high as 170 miles per hour.

Hiller Helicopter's X-18 tilt-wing VTOL recently concluded a rigorous program of free flight model tests at Langley Field.

"TEW" Line Radar

A new, light-weight, easily portable, tactical early warning (TEW) radar system, AN/-MPS-21, is being developed by Sperry Gyroscope for the Marine Corps. The system—first of comparable size and weight to provide tri-dimensional data at extreme ranges—can be transported by helicopter, cargo-type aircraft, truck or amphibious vehicle, can be set up in a battle area in two hours, and is highly adaptable to rapidly changing tactical situations in any environment.

Using miniaturized components, the MPS-21 system is about one-quarter the size and weight of conventional systems, yet can detect enemy aircraft or missiles at altitudes and distances in excess of any existing or contemplated tactical missile systems.

Electronic Weatherman

An electronic brain that's a wizard at figuring out high-altitude weather conditions has been developed by the U. S. Army Signal Engineering Laboratories. The new system spots high-altitude indications of oncoming storms, hurricanes, tornadoes and other bad weather faster and more accurately than any previous device, and is the first system capable of routinely charting high velocity winds like the jet stream. Its specially designed computers work in conjunction with a three-pound radiosonde weather station carried aloft by a weather balloon, tracking the balloon automatically and translating the radiosonde's coded signals into immediate weather information.

The Grumman AO-1 recon plane

Grumman Turbo-prop Aircraft

Grumman Aircraft has developed a two-place twin engine aircraft designed to operate from small, unimproved fields, water, snow and mud for purposes of tactical observation and reconnaissance. Known as the AO-1 Mohawk, the plane is a joint Army-Navy effort.

The airplane's configuration consists of a mid-wing, single fuselage, and high tail. The turbo-prop engines, Lycoming T-53-L-3's, are mounted in nacelles above the wing. Each engine is fitted with a three-bladed, full-feathering, reversible pitch Hamilton Standard Hydromatic propeller.

Wing-span for the Mohawk is 42 feet. Overall length is 42 feet 9½ inches and take-off power is 1,005 ESHP each.

The principal function of the AO-1 is observation, maximum visibility having been achieved by the use of a bubble canopy.

Pantobase operations are facilitated by skis which enable the Mohawk to land and take off from unprepared fields, mud, snow and water.

Speedy Shutter

The Army has gained a valuable new research tool in the form of a camera shutter which takes photographs at the rate of five billionths of a second per exposure. Developed under an Army Ordnance contract by Electro-Optical Systems, Inc., the shutter should prove valuable in the photographic study of high-speed shock waves, detonation of explosives, and certain nuclear reactions.

The secret of the shutter lies in a hermetically sealed, large-aperture, wide-angle cell containing a chemical which can be "pulsed" electronically. In "closed shutter" condition the molecules of this chemical do not permit the passage of light, but an electrical impulse realigns them to allow transmission of the image and the making of the picture.

Missile Unit Safety Bath

The Corps of Engineers' Research and Development Laboratories have come up with a portable neutralizing shower unit, designed primarily for use at tactical guided missile sites by troops who unintentionally become contaminated with liquid rocket fuel.

Constructed almost entirely of aluminum, the skid mounted unit weighs only 570 pounds, is 3 feet wide, 4.5 feet long, 7.5 feet high, and can be folded up smaller for easy transportation. The water tank can be heated by an electrical conversion unit or, without power, by three or four truck flares. Pressurized by compressed air or nitrogen from standard gas shipping cylinders, the shower is operated by a treadle on which the user stands.

New Lightweight Jets

A new family of small, lightweight, economical jet engines being developed by Fairchild Engine and Airplane Corp. will open a brand new field in jet plane designing. The small turbojets, in the 1,000 to 3,000 pound thrust range, will enable designers to create many new types of fast, versatile military and commercial aircraft previously needed but impractical to produce using large, two-ton jet engines; such types as small and intermediate personnel transports, light, subsonic navigation trainers, and light supersonic interceptors armed with missiles. The smaller engines now being tested will have thrust-to-weight ratios of eight to one and a near-future potential of ten to one as against present large jet engines' ratio of three or four to one.

Atomic Dictionary

The sudden and rapid growth of the nuclear science field has resulted in the creation of many new technical terms and the assignment of new meanings to old terms. The possible resultant verbal chaos will be averted by the issuance of a 180-page volume titled "Glossary of Terms in Nuclear Science and Technology."

Approved by the American Standards Association and published by The American Society of Mechanical Engineers, the book is designed to provide a common language among medical men, engineers, chemists, physicists, biologists and others working with the atom. It includes three categories of terms: (1) those invented expressly for the field of nuclear energy; (2) those borrowed from other fields and employed here with different meanings; and (3) those used elsewhere, but which may be unfamiliar to nuclear workers. Definitions, tables, charts and formulae considered useful are included in the glossary.

Among terms coined since the beginning of the atomic age are informal expressions such as "coffin" (a container for radioactive materials), "graveyard" (a place for storing and burying containers of radioactive materials), and "parent" (an atom which splits to form "daughter atoms").

Airlift Giant Machines

Successful tests have proven that the new Lockheed C-130 propjet transport Hercules can fly the Army Engineers' heavy earthmoving and road building machines almost anywhere in the world. Loading trials have been under way at McGuire AFB since last June with 110 items of heavy Engineer equipment; loads of Bailey bridge sections, a wheeled asphalt plant, an 18-ton D7 bulldozer, road graders, scrapers, rollers, and other massive machines.

The 15,000-horsepower Hercules can airlift up to twenty tons in its cavernous 4,300 cubic foot cargo space and can land its heavy loads on improvised, unpaved airstrips.

Interior view of the Lockheed C-130 Hercules

THE MONTH'S BOOKS

Youthful Adventure in WWII

THE UNITED STATES ARMY IN WORLD WAR II. NORTWEST AFRICA: Seizing the Initiative
By George F. Howe
Office of the Chief of Military History, 1957
748 Pages; Illustrated; Maps; Index; $7.75

Reviewed by
BRIG. GEN. EDWIN H. RANDLE, *USA, retired, who commanded the 47th Infantry RCT in North Africa and was Assistant Division Commander of the 77th Division in the Pacific.*

The account of a campaign one has participated in, read fifteen years later, begets mingled feelings. Intense interest, disappointment that so much is omitted, satisfaction in at last knowing behind-the-scenes details, and excitement in again living a memorable fragment of history. Then, too, there are tender reminiscences of youthful adventure, to borrow a phrase from Conrad, some nostalgia, and a gentle sadness.

The Africa campaign was a youthful adventure, especially the landings on the beaches of Algiers and French Morocco. A long voyage to a mysterious land of pashas and harems, an easy fight; ah! that was adventure, indeed.

"History is philosophy learned from examples." If Thucydides was correct, much of the philosophy of tactics and leadership can be learned from the examples in this heavy volume, especially if one sometimes reads between the lines.

But, regrettably, it does not tell all. To do that would require not one handsome volume, but ten. It does not tell how at Safi a lieutenant, covered by his platoon, without firing a shot, marched up to a positioned French battery and demanded its surrender. Being confused, and not knowing where their own people were, or where to shoot, the battery complied. Such lieutenants win wars.

Nor does it tell of the soldier ashore scarcely an hour, and with bullets zipping about the docks, who came to the aid station and demanded a prophylactic. He got it, too, then proceeded to rejoin his company and get on with the war.

The Africa campaign taught one thing above all others: that troops cannot be led from remote command posts. The enemy was the teacher—the enemy and George S. Patton. In World War I we had a sad joke about second lieutenants being expendable. In Africa some learned —some didn't—that *any* commander is expendable. One thing about the U. S. Army, there is always plenty of first-rate talent coming along. No one, but no one, is indispensable.

This well-organized and scholarly volume is divided into seven parts, beginning with "Preparations" and ending with "Allied Drive to Victory." But for a quick summary, the operation itself may be divided into three segments: Initial Landings, Build-up, and Drive to Victory. While the landings were highly romantic —for those who survived—and final victory exciting and satisfying, the greatest interest for the average military student, I think, lies in the events between, say, January and April 1943.

During this period the Americans were learning war, and without the tremendous superabundance of everything they became accustomed to later. They were the underdog fighting to hang on; too few, scattered too widely, but marching and fighting in a clumsy, dogged way against the best troops of the Desert Fox. It was a confused war of movement not altogether unlike the Civil War. The defense and loss of Kasserine Pass brings memories of Gettysburg, particularly the failure to pursue.

Of all the dreaded nightmares, the orders telephoned to Colonel Alexander N. Stark the evening of 18 February were without doubt the worst. He was to ride thirty miles over dark, unfamiliar trails and take command of a heterogeneous mixture of troops hastily thrown together in Kasserine Pass, all strangers to him and to one another save one of his own battalions of the 26th Infantry. Without a staff, a CP organization, or communications; with Rommel in person at the mouth of the pass ready to drive through, Stark was ordered to "pull a Stonewall Jackson"—whatever that meant.

If you have seen Kasserine Pass you know that even in daylight its weird terrain beats any sketch of hell Doré could possibly have dreamed up. One good division could have held it, given a little time for organization, but not the meager assortment Stark somehow found in the murky night. The wonder is that they held at all, but hold they did, and for two full days, despite snide remarks from a pair of visitors from Thala who hurriedly departed when stuff began to fly. Stark Force held all of the 19th and until dusk of the 20th, when it was overrun. Rommel said the defense was stubborn, and the performance of U. S. troops superior.

But during those two critical days, did the commander who ordered Stark to "pull a Stonewall Jackson," or his chief of staff, or any principal staff officer visit Stark to learn the exact situation and how he could be aided? They did not.

I have mentioned the defense and loss of Kasserine Pass as just one example of the wealth of military examples in this book. The hindsight of everyone is good. Bismarck is supposed to have said, "Fools learn from their own mistakes; I learn from the mistakes of others." One can learn from the successes of others, too, and Dr. Howe describes many successes as well as failures.

He has done a monumental work of researching American, British and German records in preparing this needed volume. It will be the standard for a long time to come. The maps are excellent, with only an occasional irritation at not being able to find places mentioned in the text, a failure common to most military histories.

Guide to Communication

THE PRESENTATION OF TECHNICAL INFORMATION
By Reginald O. Kapp
Constable & Company (The Macmillan Company), 1957
147 Pages; Index; $1.95

Reviewed by
JULIUS SEGAL, *a psychologist and freelance writer, who is Senior Research Scientist on the staff of the Human Resources Research Office of The George Washington University.*

"He probably knows his stuff, but he sure can't get it across."

Every day scores of frustrated students use these familiar words to describe teachers who somehow fail to communicate with their audiences. The quotation applies not only to teachers who work in buildings covered with ivy. All those who presume to transmit specialized information—whether in writing or by the spoken word—are open to similar criticism. Only the most talented or the most immodest among them can feel entirely secure.

The danger of faulty communication by those of us who deal in the transmission of technical information is especially great. In an age of military and scientific specialization, barriers to successful information transfer are tougher than

ever. If only for this reason, the recent reprinting of Professor Kapp's nine-year-old book is indeed welcome.

And a delightful book it is! The author is an engineer—a technician who appreciates (and has obviously conquered) the manifold problems that beset the technician-writer or speaker who seeks to educate, to inform. Though it is true enough that clear thinking is a prerequisite for clear expression, even the clearest of thinkers often needs help in mastering the art of exposition. Such help Professor Kapp gives us in highly entertaining and easy-to-take doses.

For Kapp, the cornerstone of successful presentation lies in the use of what he calls "Functional English . . . the English that any writer uses who expresses his meaning clearly and without ambiguity; who spares his readers unnecessary effort; who selects every item and places every sentence and every word so that it will meet the function assigned to it. . . ." Anyone who has seriously attempted to write English that meets these criteria will agree with Kapp's evaluation of the difficulties involved; about as easy to learn without training and practice as playing the violin.

Kapp administers his Functional English cure to expository ills similar to those described by Rudolf Flesch in *The Art of Readable Writing* and by countless others who have offered literary guidance. This, of course, is not surprising. Pitfalls in communication are not too hard to identify, and there are just so many ways to avoid them. What makes Kapp's effort unique and especially valuable, however, is the fact that he writes for and about a special breed of expositors—the technicians—whose problems are unusually complicated and difficult to overcome.

To the scientific writer, whose words must be carefully circumscribed by his data, Kapp's assistance should be especially welcome. How to avoid careless or wishful statements, how to set forth qualifications that are precise yet not destructive of all reader interest, how to make difficult material easy to understand—these are some of the do-it-yourself items offered in the interest of keeping the scientist's communication channels from being overloaded with words that serve no function but to bore or confuse.

The author's sensitivity to the problems of the technical writer is well demonstrated in his treatment of "the significance of numbers." It is altogether too easy for the mathematician or the statistician to fall into the trap of writing about quantitative data as though every reader appreciates their subtlest meanings. As Kapp points out, the writer has an obligation to frame his numbers in words through which the real, practical significance of the digits at hand will be unmistakable. He has some useful suggestions for accomplishing this feat.

The author, practicing one of his preachments, enhances the readability of his own book through the liberal use of examples, all of them apt and many of them witty (in both the British and general sense of the term). To illustrate some of the faults often found in technical English, Kapp gives us an excerpt from Marc Antony's speech as the author of a scientific treatise might write it: "In this case I have undertaken the journey here for the purpose of the interring of the deceased. From this point of view I do not, however, propose putting anything on record in so far as praise is concerned."

For all its merits, this book—or any other like it—can accomplish no miracles. The writer or speaker who honestly wants to communicate with his audience will find in even the most effective guidance (and it is hard to see how Kapp's can be improved upon) no substitute for self-discipline and sweat. Wrestling with words is simply not an easy task, and anyone who hopes to produce writing of clarity and style through the simple expedient of a how-to manual is doomed to failure.

Given a degree of conscientious effort, however, this book will serve the technician admirably. At a time in our nation's history when the development *and* proper utilization of scientific information is a vital responsibility, the technician ought to feel a special obligation to use every aid to communication at his disposal. He will do wrong not to read this book and keep it within easy reach.

Selected Check List of the Month's Books

This run-down of some of the books received for review during the month preceding our deadline is to give our readers who like to follow current literature a monthly check list of the most important, useful and potentially popular books. Full reviews of some of these books may appear in this or subsequent issues. Any of these titles may be purchased through the Combat Forces Book Service.

A. P. HILL: Lee's Forgotten General. By William Woods Hassler. Garrett & Massie, 1957. 249 Pages; Illustrated; Maps; Index; $3.95. The first biography of the corps commander whom Lee ranked next to Jackson and Longstreet. A scholarly and readable study of a prime figure in the Army of Northern Virginia.

ART OF WAR: The Greek and Macedonian. By F. E. Adcock. University of California Press, 1957. 109 Pages; Index; $3.00. A short work of interpretation of ancient tactics and logistics. For the deep student.

ATOMS AT YOUR SERVICE. By Henry A. Dunlap and Hans N. Tuch. Harper & Brothers, 1957. 166 Pages; Illustrated; Index; $3.50. This is just about as elementary as it can be without being juvenile; the level is about that of the newspaper science column.

A CIVIL WAR ARTIST AT THE FRONT: Edwin Forbes' Life Studies of the Great Army. Edited by William Forrest Dawson. Oxford University Press, 1957. 96 Pages; $6.50. Pen-and-ink sketches by a Civil War Ernie Pyle who accompanied the Army of the Potomac from 1862 to 1864 as staff artist for *Frank Leslie's Illustrated Newspaper*. A must for Civil War buffs.

ENSIGN O'TOOLE AND ME. By Capt. William J. Lederer, USN. W. W. Norton & Company, 1957. 247 Pages; $3.75. The author of *All the Ship's at Sea* sails again—up the Yangtse, down the China Sea, into the Pentagon, and through the Admiral's mess. A new and hilarious, and partly serious, skirmish and love affair with the U. S. Navy. Largely about uproarious incidents and people.

GRANT AND LEE: A Study in Personality and Leadership. By Maj. Gen. J. F. C. Fuller. Indiana University Press, 1957. 323 Pages; Maps; Index; $5.00. The author, in his foreword to this edition, says that the wealth of material published since he wrote this book twenty-five years ago, has not led him "in any radical way to change my estimates of the two great protagonists of the Civil War."

THE MEMOIRS OF GENERAL WILLIAM T. SHERMAN. By Himself. Indiana University Press, 1957. 409 Pages; $8.00. Sherman's intimate first-hand account, first published nearly ninety years ago, reveals the development of his ultimate theory that the way to decide wars and win battles is "more by the movement of troops than by fighting." Capt. B. H. Liddell Hart contributes the foreword to this edition. Unfortunately, there are no maps or index.

NUMBERS AND LOSSES IN THE CIVIL WAR. By Col. Thomas L. Livermore. Indiana University Press, 1957. A reissue of a title first published in 1900. Accepted for more than half a century by historians, both North and South.

THE SHAKESPEAREAN CIPHERS EXAMINED. By William F. and Elizabeth S. Friedman. Cambridge University Press, 1957. 303 Pages; Illustrated; Index; $5.00. Proving that someone else wrote Shakespeare has become a popular pastime. Colonel Friedman, USAR, retired, and his wife, recognized cryptographic experts, examine the evidence on Shakespeare. Not for dilettantes.

Firearms History

THE AGE OF FIREARMS: A Pictorial History
By Robert Held
Harper & Brothers, 1957
192 Pages; Illustrated; Index; $7.50

Reviewed by
JAC WELLER, *firearms consultant and Honorary Curator of the West Point Museum, author of many articles on weapons history and firearms in general, as well as a book on firearms identification.*

Mr. Held has produced a book in part both brilliant and accurate. It is based upon careful and thorough research. His accounts of early explosives and their adaptation to projecting objects from tubes are the best and most trustworthy treatments of these controversial matters that I have seen. He seems to evaluate accurately both the Middle East and Oriental claims to firearms invention. He has obviously studied at first hand and with ability all existing records, and drawn careful conclusions.

The book is actually two in one. The narrative, which is apparently all Mr. Held's, could be separated from the many superb illustrations and pictures and still be interesting. Nancy Jenkins has assisted in providing the latter and has arranged them both pleasingly and appropriately. There are reproductions from many old books, newly drawn sketches, photographs from Britain and elsewhere, and other remarkable pictorial material. All this is very good and very well done; it is perhaps the best pictorial achievement in modern firearms publishing.

To return to the narrative, Mr. Held holds a steady, powerful pace through the fourteenth, fifteenth, sixteenth and well into the seventeenth centuries. His facts are correct. His inferences and conclusions are courageously reached and logically sound. He follows no other author, but does his research painstakingly and records exactly what he either finds or concludes. One wishes he were more familiar with definite terms that always denote the same thing among contemporary American students.

After about 1700, however, Mr. Held seems to lose his ambition for accuracy and gain in its place too much imagination about irrelevant things. To accuse Napoleon of personal uncleanliness is unthinkable. Normal windage in firearms does not greatly reduce velocity. Oscar Wilde, not George Bernard Shaw, coined the phrase about "the unspeakable in full pursuit of the uneatable."

Mr. Held is not so well acquainted with ordnance engineering as with historical research, yet he avoids some errors that have been made by others. Suddenly, however, he begins to falter. His details of early bayonets are vague. His deductions on the Brown Bess are erroneous, and his characterization of Patrick Fergusson is almost personally vicious and incorrect according to even his opponents in the southern theater of the American Revolution. His knowledge of the actual fighting in the American Revolution, the Baker rifle, the British 60th Rifles, and the famous 95th Foot, seems almost nonexistent.

However, the author has already more than accomplished his mission. There are many good books covering the period from 1700 onward. This is one of the very few good books dealing with firearms before that time with both brevity and clarity. Perhaps it's the best.

I suggest caution in accepting the author's concluding statement concerning "the history of firearms ended between seventy and eighty years ago." I fired the M14 at Aberdeen this fall with the sudden roar of one of the new aircraft machine guns going off a mile away. I hunted elk and moose with a new Weatherby .257 and the Model 70 Winchester .458 only weeks ago. These modern arms show at least as much advance over the old black-powder Gatlings, the Springfield .45-70, and the Model 1876 Winchester, as can be found in any other similar period since the fabled explosion in a grinding mortar sent the pestle through the ceiling.

Rules of Occupation

THE OCCUPATION OF ENEMY TERRITORY
By Gerhard von Glahn
University of Minnesota Press, 1957
350 Pages; Index; $6.50

Reviewed by
COL. ELBRIDGE COLBY, *USA, Retired, who specialized on this topic at Charlottesville, and in England and Normandy, and was author of one of the few law review articles in this field between the wars.*

This volume deals with a topic of deep concern to many military men, which may indeed be of specialized interest to a goodly number.

It used to be that military seizure meant conquest. Inhabitants of invaded areas were forced to swear new allegiances, and the newly taken lands were almost automatically incorporated into the holdings of the victorious state. Then, largely during the eighteenth century, new practices grew up and the ultimate disposition of captured areas began to depend less upon accomplished fact and more upon the outcome of diplomatic negotiations at peace conferences. For an instance close to home, Louisbourg was taken by colonials in the 1740s, but they saw it given back to France at war's end. Thus there naturally grew up a body of opinion and practice as to the rights and duties of a military force which merely occupies a territory. But neither this nor what we call the international law of war as a whole was well formalized until very modern times—until, in fact, the beginning of the present century.

Meanwhile, we were having experiences of our own in this field, and precedents were being created. In the War of 1812 our land was enemy-occupied at Castine in Maine and at Detroit in Michigan. At the Supreme Court, John Marshall was deciding cases on "the custom of nations" which had "become law." General Scott was issuing proclamations in Mexico, and the Lieber Instructions of 1863 to the Union forces and our experiences in Cuba, Puerto Rico, and the Philippines at the turn of the century reached into this topic.

From the very beginning of the rise of national states, there arose scholars who discussed the rules of war—Grotius in the 1600s and Vattel in the 1700s—and these had formulated doctrines on occupation. But the great impetus in this special field came after the Franco-Prussian War. Many scholars entered the field, war was becoming more and more professional, and nearly forty years of discussion culminated in the Hague Conventions of 1899 and 1907, both of which developed many "rules" governing hostile occupation, which were repeated in handbooks to armies by most of the great national states. There was a spate of arguments over Germany's conduct as an occupant in Belgium and France during World War I, but—our author here says—an early slackening of postwar interest in the matter and no comprehensive study of the whole field.

Just as the development of air warfare brought previously unforeseen elements in the general laws of war, so the development of economic warfare into the same struggle introduced elements not foreseen in the Hague Conventions. Then, two decades later, when war became more and more total, World War II developed a mass of incidents, stimulated thought in the field, produced a very considerable new "literature" on hostile occupation and also widespread international agreement in Geneva Convention Four of 1949 on the treatment of civilian populations.

Our government in 1956 revised its *Rules of Land Warfare* of 1940 to include this latest material, and the Civil Affairs manuals of 1943 and 1947 are also said to be about to be superseded. Our new regulations take into account the Geneva agreement of 1949.

All this is of deep concern, even to the combat commanders, who wish to be assured that they will not have constantly to be looking back over their shoulders at civilian affairs in rear, when armed enemy units are still to their front. The new laws bring new concepts on the treatment of civilians, deportation, destruction of property, collective responsibility, and

the functioning of occupation courts. They still leave gaps on health, relief and welfare programs. The author is an accomplished professor of political science with experience in military government. He handles the problems realistically and practically, as well as with intensive scholarship. He attempts to summarize the various phases of occupation activity, and to point out where rules gaps still exist, and how they are "likely" to be filled. He differs on some points with so-called recognized "authorities" but always frankly and, in my opinion, sensibly. Although our *Rules of Land Warfare* contains considerable explanatory comment, and it is assumed the new "Manual of Civil Affairs" will too, this volume will, without pedanticism, give richer backgrounds and clearer understanding.

Big Wars in Small Dimensions

MAKING AND COLLECTING MILITARY MINIATURES
By Bob Bard
Robert M. McBride Company, 1957
196 Pages; Illustrated; $5.00

Reviewed by
LT. COL. ROBERT B. RIGG, Armor, *contributor of many articles and reviews, who has published* Red China's Fighting Hordes *and* Realistic Combat Training.

Of the many miniature worlds of hobby none is older than that of the tiny tin soldier who has reconstructed regiments and lost legions of wars long past. The tombs of ancient Egypt have yielded little wooden foot soldiers bearing spears, and also charioteers. In Sardinia and Italy, archaeologists have dug up small bronze figures wearing helmets and carrying the small shield and short sword of the Phoenician warrior. Ancient grave mounds have been found to contain miniature foot troops and cavalrymen very obviously not toys.

This is the story of the miniature men of indoor battle—silent soldiers whose rules of warfare were actually drafted by H. G. Wells. In his book *Little Wars* he drew up a concept of humane warfare in 1913. His precise rules brought to an end the wholesale slaughter of lead, tin and wood soldiers by catapult, rubber bands, marbles and other destructive weapons of minuscule warfare. "Miniature murder, the mere setting up and knocking down of men," the author relates, "was stopped. The rules set down by Mr. Wells form the basis for most of the rules used today in War Games played with military miniatures."

This is an excellent book for the hobbyist whose realm lies in the pageantry of miniature arms, armor, banners, and uniforms of history. Bob Bard speaks with authority on multiple phases of the hobby, from collecting and making the tiny warriors to the waging of war games on sandtables. Forming, casting, painting, maneuvering—all techniques are interestingly described to the point that the hobbyist can go immediately to work.

Fact-filled and illustration-laden, this fascinating text recites history of the hobby as it develops the modern-day techniques of an avocation that occupies the time of some twelve thousand known collectors in America. It is the first volume ever to be issued on the hobby and it is certain to be valued by the novice as well as the advanced practitioner who converts the toy soldier into a valuable museum piece. Bard's book even illustrates how to create dioramas and scenery and carry out "table top" photography.

"Knocking a ball around a field with a club in an effort to get it in a hole isn't much different from shooting a miniature soldier in a war game," says the author, but he doesn't go into atomic conflicts. However, he offers a good ground rule that could apply for casualties if atomic-age soldiers are to be played: "There are even today many players who frown on the actual shooting down of enemy troops with model artillery and who use instead dice and circles of cardboard to indicate the radius of destruction. . . ."

Foreign Jurisdiction Analyzed

STATUS OF FORCES AGREEMENTS AND CRIMINAL JURISDICTION
By Joseph M. Snee, S.J., and A. Kenneth Pye
Oceana Publications, 1957
167 Pages; $6.00

Reviewed by
COL. JAMES K. GAYNOR, *JAGC, who is presently Chief, Legislative Division, Office of the Chief of Legislative Liaison, Office of the Secretary of the Army.*

The fact that American servicemen in foreign countries may in some circumstances be tried by local courts, rather than by courts-martial, was forcefully brought to public attention by the Girard affair in Japan. The death of Naka Sakai, the Japanese woman fatally struck by an expended cartridge case fired from a grenade launcher, however, did not provide the initial rumblings of the storm.

The provisions of the Status of Forces and other similar agreements which authorize such trials by foreign courts long have caused bitter debates between their proponents and their opponents. There are now more than two dozen bills or resolutions pending in Congress which are designed to prohibit or restrict foreign jurisdiction over American military personnel. A number of them were introduced prior to the fatal shooting of Mrs. Sakai on 30 January 1957.

The Status of Forces Agreements with NATO countries, the Administrative Agreement with Japan, and similar agreements with other countries in which American troops are stationed, provide for the multitudinous details incident to the presence of our troops in friendly foreign lands. It is only the provision relating to jurisdiction which has come under fire, and which is defended with equal vehemence by those who favor it.

Joseph M. Snee, S.J., is a Catholic priest who long has been interested in various phases of military law. He has an SJD degree, the highest a lawyer can earn, from Harvard. Lieutenant A. Kenneth Pye, JAGC-USAR, was assigned to appellate work in OTJAG while on active duty from 1953 to 1955. Both are law professors at Georgetown University.

During the summer of 1956, Father Snee and Professor Pye spent three months in Europe under the auspices of the American Law Institute and Georgetown University, with full Department of Defense cooperation, studying at first hand the operation of the jurisdictional features of the Status of Forces Agreements. In France, Italy, Turkey, and the United Kingdom, they not only discussed the matter with commanders and judge advocates or legal officers of all three services, but they also had discussions with many foreign lawyers who were administering the jurisdictional problems in behalf of their countries.

Status of Forces Agreements and Criminal Jurisdiction provides a scholarly treatment of criminal jurisdiction aspects of the agreements and their background, analyzes a number of specific problems which have been presented, and presents succinct conclusions as to how the authors feel the jurisdictional features are working.

Among specific matters given full coverage are personnel subject to the jurisdictional provisions, jurisdiction under Article 134 of UCMJ, cases arising in performance of official duty, problems concerning custody, assistance in obtaining evidence and witnesses, the imposition of sentences, and the right to counsel.

Rather than including brief discussions of the facts of many cases, the authors analyze specific problems which have arisen or may be expected to arise, and discuss at some length the Girard case and the Whitley case in France.

The book is well written, and includes copious footnote references for the legal scholar. Lay readers will find the specific problems discussed in an understandable and a thought-provoking manner.

Although the authors conclude that the jurisdictional features of the SOF and other similar agreements are working satisfactorily, their treatise is in the nature of analysis rather than argument. Their book will appeal more to those seeking information as to the implications of the jurisdictional provisions than to those seeking arguments for or against the existence of the provisions.

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The Association of the U. S. Army shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its elements, branches, and components and providing for and assuring the Nation's military security.

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REPORT FROM YOUR AUSA CP

"Bill me later" memberships have always been a problem to your Association. Funds which should be used to further our objectives are necessarily diverted to pay the salaries, postage, and other costs involved in billing and collecting. In the past year, these costs and the losses from uncollected dues amounted to over $20,000.

We are fighting a hard battle against rising costs in all areas. The costs of printing, paper, engraving, and services have all risen many times since dues were last increased in 1950. By careful economy we have been able to make ends meet, but we cannot continue to do so unless we cut costs materially. The only alternative, an increase in membership dues, is undesirable for obvious reasons. In order to prevent it, we must, effective 1 April 1958, cease to accept applications for membership unless payment accompanies the application. For the time being, we will continue to bill members *renewing* a current membership when specifically requested. This change in no way affects Chapter members (they have been on a cash basis since May 1957). Subscribers to ARMY are on a cash basis beginning 1 January 1958.

We are certain that members and prospective members of the Association will understand the necessity for this step and will give us their wholehearted support and cooperation in order to eliminate the loss and to permit the application of more money and effort on our primary functions.

One hundred per cent of the officers of the 168th Infantry, Iowa National Guard, are now members of the Association. I believe that this is the first National Guard organization to achieve this status. Our congratulations and appreciation!

Don't forget, nominations for the positions of President, Vice President, and four members of the Council of Trustees are due by 15 January. Also nominations for 13 members of the Advisory Board of Directors are due by 1 March (see December issue of ARMY for more complete details).

In 1957 we printed a total of 706,000 copies of ARMY which were distributed to members, subscribers, advertisers and news media.

Regular quarterly meeting of Council of Trustees, held in Washington on 5 December, drew quorum of seven members despite city's worst snowstorm in sixteen years. Col. Slezak, Mt. Morris, Illinois; Gen. Sverdrup, St. Louis; Gen. Baker, Philadelphia; and Mr. Belding, Los Angeles, were out-of-town members present.

Action taken included: (1) Acceptance of Gen. Gruenther's resignation, caused by pressure of duties with Red Cross; (2) disapproval of Mother Lode Chapter's proposal of "Supporting Membership" category for small business firms; (3) first step toward giving Associate Members voting rights by proposing amendment to By-Laws, which, under Article X of the By-Laws, cannot be voted upon until the next regular Council meeting. To be effective the proposal must receive an affirmative vote of two thirds of the members of the Council. Other procedural actions were taken, and the Council examined the conduct of Association affairs as required. The next regular meeting of the Council will not be held until March 1958.

WALTER L. WEIBLE
Lt. Gen., USA, Retd.
Executive Vice President

AUSA REGIONAL ACTIVITIES

CHAPTERS

ABERDEEN CHAPTER—Box 331, USAOS, Aberdeen Proving Ground, Md. *President:* Capt. Max F. Pachl, Jr.; *First Vice President:* Capt. Jeffie W. Muskrat; *Second Vice President:* MSgt Delbert R. Gentry; *Secretary:* Capt. Mary L. Immel; *Treasurer:* 1st Lt. John P. Lewis. *Geographic Area:* Aberdeen Proving Ground, Maryland, and adjoining Harford County in Maryland.
Chartered 27 November 1957. Above officers elected 5 November.

ALAMO CHAPTER—P.O. Box 11401, San Antonio 8, Texas. *President:* Lt. Col. Reagan Houston, III, USAR; *First Vice President:* Gen. William H. Simpson, USA-Rtd.; *Second Vice President:* Col. J. Hamilton Savage, Jr., USAR; *Third Vice President:* Col. John W. Beretta, USAR; *Judge Advocate:* Col. C. E. Brand, USA-Rtd.; *Chaplain:* Maj. David M. Reardon; *Secretary:* Capt. Badger V. Upton; *Treasurer:* Col. E. C. Peters.

ALBUQUERQUE CHAPTER—Hq U. S. Army Military District, New Mexico, P.O. Box 1689, Albuquerque, N. M. *President:* Col. Benjamin T. Rogers, Rtd.; *First Vice President:* Col. Charles K. Dillingham, Rtd.; *Second Vice President:* MSgt Vernon E. Kerr, USAR; *Secretary:* Lt. Col. James M. Keating, Rtd.; *Treasurer:* Maj. Vance Mauney, USAR.

ANTILLES CHAPTER—U. S. Army Garrison, Fort Buchanan, APO 851, New York, N. Y. *President:* Lt. Col. Bunn D. Hale; *First Vice President:* Mr. John R. Visco; *Second Vice President:* SFC William D. Kinter; *Secretary:* Capt. Jack R. Ramey; *Treasurer:* Mr. Efrain Munoz-Bocanegra.

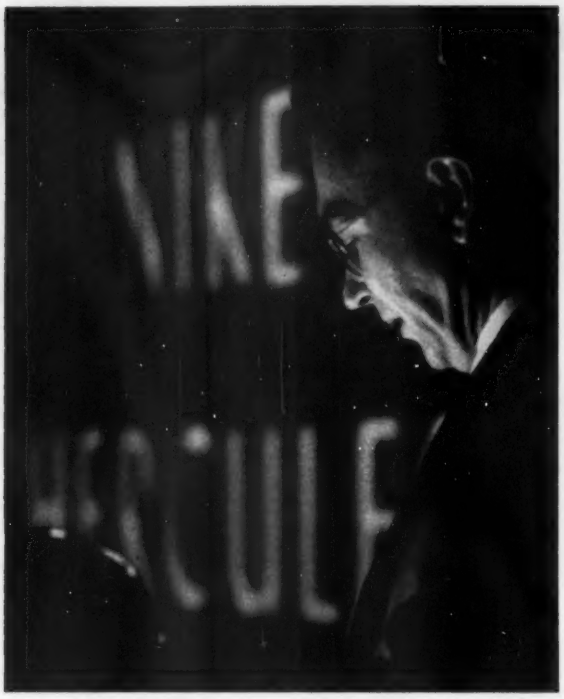
BAD KREUZNACH CHAPTER—Hq 2d Armored Division Trains, APO 42, New York, N. Y. *President:* Col. E. T. Knight; *First Vice President:* 1t. Col. J. R. Metzdorf; *Second Vice President:* Lt. Col. H. O. Husband; *Secretary:* Sgt. J. J. Harrison; *Treasurer:* Lt. F. M. Ash.

BALTIMORE CHAPTER—*Secretary:* Col. James C. Henderson, USAR, Liberty Heights USARC, 3906 Liberty Heights Ave., Baltimore 7, Md. *President:* Mr. John Marshall Boone; *First Vice President:* Mr. William A. Graham; *Second Vice President:* Mr. Jack A. Clarke; *Treasurer:* Mr. Charles A. Noon, Jr.

CALIFORNIA CENTRAL VALLEY CHAPTER—c/o Information Officer, Sharpe General Depot, Lathrop, Calif. *President:* Brig. Gen. D. S. McConnaughy, USA-Rtd.; *First Vice President:* Col. Robert S. Quick; *Second Vice President:* Col. Wyan Thiessen, USA-Rtd.; *Secretary:* Mr. Kenneth F. Neill; *Treasurer:* Mr. Carroll G. Grunsky.

CENTRAL FLORIDA CHAPTER—P.O. Box 2631, Orlando, Florida. *President:* Col. David W. Hedrick, USAR; *First Vice President:* Maj. James B. Sullivan, USAR; *Second Vice President:* Capt. Leslie C. Hall, USAR; *Secretary:* CWO Elbert G. Hennig, USAR; *Treasurer:* Lt. Col. George E. Smith, USAR.

THE CHICAGO AREA CHAPTER—Room 226, 666 North Lake Shore, Drive, Chicago 11, Illinois. *President:* Gen. Robert E. Wood, USA-



FORT ORD, CALIF. Dr. James B. Edson, Office of the Chief of Research and Development, USA, addresses a capacity audience of 1,500 at Monterey County Chapter's meeting held at the Fort Ord Soldiers' Club on 3 December.

Rtd.; *First Vice President:* Brig. Gen. Lawrence Whiting, USAR-Rtd.; *Second Vice President:* Brig. Gen. Otto Kerner, USAR-Rtd.; *Third Vice President:* Col. Walter L. Furbershaw, USAR-Rtd.; *Fourth Vice President:* Col. Joseph Triner; *Secretary:* Col. Jules V. Houghtaling, USAR-Rtd.; *Treasurer:* Lt. Col. O. C. Tyler, USAR; *Asst. Secretary:* Lt. Col. Herbert Moselle, USAR.

COLUMBUS-PHENIX CITY-FORT BENNING CHAPTER—*Secretary:* Col. S. S. Sogard, Adjutant General's Section, Fort Benning, Ga. *President:* Mr. T. G. Reeves; *First Vice President:* Mr. J. W. Woodruff, Jr.; *Second Vice President:* Lt. Gen. Manton S. Eddy, Rtd.; *Treasurer:* Lt. Col. Edward D. Fitzpatrick.

FORT RUCKER, ALA. Officers and distinguished guests at the Charter Night banquet of Southeast Alabama Chapter. *Left to right:* Hon. Douglas Brown, Mayor of Ozark, Second Vice President; Brig Gen. Ernest Easterbrook; Maj. Gen. Hamilton H. Howze, Director of Army Aviation; Hon. M. N. Brown, Mayor of Enterprise, President; Lt. Gen. Walter L. Weible, Executive Vice President of AUSA; Congressman George Grant; Congressman George Andrews; Lt. Gov. Guy M. Hardwick; Brig. Gen. B. S. Cairns, Commandant of Army Aviation School; John Horne, Administrative Assistant to Senator John W. Sparkman.

DALLAS CHAPTER—*Secretary:* Lt. Col. John L. Briggs, Southland Insurance Company, Dallas, Texas. *President:* Col. William B. Ruggles, USAR-Rtd.; *First Vice President:* Mr. Harold F. Volk; *Second Vice President:* Mr. N. J. DeSanders, Jr.; *Treasurer:* Mr. Lloyd S. Bowles.

DES MOINES CHAPTER—*Secretary-Treasurer:* Lt. Col. Clyde Putnam, USAR, 720 Des Moines Bldg., Des Moines, Iowa. *President:* Col. Harold E. Pride; *First Vice President:* Lt. Col. Willard Hayne; *Second Vice President:* Lt. Col. William Leachman.

DETROIT CHAPTER—*Secretary:* Mr. Harold J. Miller, Hq Ord Tank-Automotive Command, 1501 Beard, Detroit 9, Michigan. *President:* Maj. Gen. Gordon A. MacDonald, NGUS; *First Vice President:* Col. T. S. Cawthorne, USAR; *Second Vice President:* Mr. Clifford O. May; *Treasurer:* Col. Robert Bruce.

DIX CHAPTER—*Secretary:* MSgt John W. Holland, Hq U. S. Army Training Center, Infantry, Fort Dix, New Jersey. *President:* Col. G. C. Jones; *First Vice President:* Col. R. W. Reed; *Second Vice President:* MSgt J. J. Corcoran; *Treasurer:* Capt. W. J. Jenkins.

EAST BAY CHAPTER—c/o Col. Earl W. Huntting, Secretary, Insurance Securities Trust Fund, 2030 Franklin St., Oakland 12, Calif. *President:* Mr. Edwin Meese, Jr.; *First Vice President:* Maj. Gen. William F. Dean, USA-Rtd.; *Second Vice President:* Major Paul Reed; *Treasurer:* Lt. Col. John A. Dutro, USAR.

EIGHTH INFANTRY DIVISION CHAPTER—Hq 8th Infantry Division, APO 111, New York, N. Y. *President:* Col. Elmer Schmierer; *Vice President,* Goeppingen Area: Maj. Robert L. Jones; *Vice President,* Ulm Area: Lt. Col. Joseph E. McKinney; *Vice President,* Nurnberg Area: Col. William R. Peers; *Vice President,* Heilbronn Area: Maj. Thomas P. Furey; *Secretary:* 1st Lt. Robert B. Short, Jr.; *Treasurer:* 1st Lt. Jack Biggerstaff.

EL PASO CHAPTER—*Secretary:* Mr. C. William Wakefield, P.O. Box 193, El Paso, Tex. *President:* Dr. Hervey W. Dietrich; *First Vice President:* Mr. Richard W. MacCarthy; *Second Vice President:* Mr. L. T. Vice; *Treasurer:* Mr. George E. Rawson.

Chapter acted as co-host for high-level briefings in connection with Texas-New Mexico Day at White Sands and Fort Bliss, 20 November.

ELEVENTH AIRBORNE DIVISION CHAPTER—APO 112, New York, N. Y. *Honorary President:* Maj. Gen. Hugh P. Harris; *President:* Colonel A. R. Taylor; *First Vice President:* Lt. Col. Edgar R. Fenstemacher; *Second Vice President:* MSgt Abel J. Fernandez; *Secretary:* MSgt Russell A. Steinkuehler; *Treasurer:* Capt. George A. Peters.

FORT DEVENS CHAPTER—*Treasurer:* Major Margot Reis, Fort Devens, Mass.; *President:* Col. Fred L. Walker; *First Vice President:* Lt. Col. Robert C. Harris; *Second Vice President:* Maj. Glenn N. Mayo.

FORT HOOD CHAPTER—*Secretary:* MSgt Maurice N. Madison, G4 Section, Bldg. 2225, Fort Hood, Tex. *President:* Brig. Gen. J. A. Berry; *First Vice President:* Mr. W. S. Bigham; *Second Vice President:* Col. J. F. Delaney, Jr.; *Treasurer:* Capt. M. M. Gentry.

Col. F. G. Smith spoke on "The Missile Command" at meeting 6 November, followed by film "The Challenge of Outer Space." General Berry, SFC Batchelor, and SFC Burns, at meeting 25 November, gave talks on their observations at AUSA's 1957 Annual Meeting.

FORT LEE CHAPTER—Hq Quartermaster Training Command, Fort Lee, Virginia. *President:* Col. Elmer M. Burns; *First Vice President:* Dr. Howard W. Hembree; *Second Vice President:* Col. Alexander G. Eagle; *Secretary:* Lt. Col. Earl M. Bradley; *Treasurer:* 1st Lt. Carl P. Flanagan, Jr.

FORT LEONARD WOOD CHAPTER—*Secretary:* Lt. Col. George A. Rigely, Building 401, Fort Leonard Wood, Mo. *President:* Brig. Gen. T. A. Lane; *First Vice President:* Mr. Dru Pippin; *Second Vice President:* Col. Melvin H. Ouimet; *Treasurer:* CWO Carl E. Henderson.

FORT RILEY-CENTRAL KANSAS CHAPTER—Room 114, Patton Hall, Fort Riley, Kansas. *President:* Mr. John D. Montgomery; *First Vice President:* Mr. Ralph Wareham; *Second Vice President:* Mr. Charles S. Arthur; *Executive Secretary:* Mr. Blair D. Adam; *Treasurer:* Mr. Ed J. Rolfs, Jr.; *Recording Secretary:* MSgt George E. Bales.

FORT SHERIDAN CHAPTER—Fort Sheridan, Ill. *President:* Lt. Col. Warren J. King; *First Vice President:* Maj. Dale E. Williams; *Second Vice President:* Mr. Donald Y. McKay.

FRANKFORD ARSENAL CHAPTER—Bridge and Tacony Streets, Philadelphia 37, Pa. *President:* Dr. William J. Kroeger; *First Vice President:* Mr. Harry F. Devlin; *Second Vice President:* Mr. George S. VanDyke, Jr.; *Secretary:* Mr. Reuben Levine; *Treasurer:* Mr. Kenneth E. Yocum.

FRANKFURT CHAPTER—*Secretary:* Capt. Robert M. Dwinell, Hq 4th Armor Group, APO 757, New York, N. Y. *President:* Col. Melvin M. Kernan; *First Vice President:* Col. Clarence E. Read; *Second Vice President:* Col. Austin J. Montgomery; *Treasurer:* Maj. Robert J. Fair.

GARRY OWEN CHAPTER—Inactive.

GEORGE WASHINGTON CHAPTER—*Secretary:* Mr. Henry Handler, 409 Perry Street, Fairfax, Virginia. *President:* Dr. Roland R. Kirks; *First Vice President:* Gen. Jacob L. Devers, USA-Rtd.; *Second Vice President:* Mr. Warren R. Smith; *Treasurer:* Major John P. Kelley.

GREATER LOS ANGELES CHAPTER—*Secretary:* 1st Lt. Doris M. Schmerling, CO, Wac Det., Fort MacArthur, Calif. *President:* Mr. Robert C. Geffs; *First Vice President:* Col. Joseph H. Pengilly, USAR-Rtd.; *Second Vice President:* Lt. Col. Jack Warner, USAR; *Treasurer:* Brig. Gen. A. J. Maxham, Cal. NG Res.

HAWAII CHAPTER—Association of U. S. Army, Box 100, APO 958, San Francisco, Calif. *President:* Lt. Gen. Henry S. Aurand, USA-Rtd.; *First Vice President:* Brig. Gen. Kendall J. Fielder, USA-Rtd.; *Second Vice President:* Maj. Gen. Fred W. Makinney HNG; *Third Vice President:* Col. Percy H. Johnston, USAR; *Secretary:* Major Charles D. Flinn; *Treasurer:* Capt. Kenneth Y. H. Ahana.

Mr. Frank E. Midkiff, Civilian Aide to the Secretary of the Army, addressed 23 November meeting on events at AUSA's 1957 Annual Meeting. He was followed by Gen. I. D. White, who spoke on the dangers of a one-weapon strategy, and by Maj. Gen. A. W. Stuart and Lt. Gen. Henry Aurand, who made brief remarks. The meeting was well publicized in local news media. The Chapter went on record as supporting all AUSA objectives as adopted at the Annual Meeting.

HEADQUARTERS SEVENTH U. S. ARMY CHAPTER—c/o Secretary of the General Staff, Headquarters, Seventh U. S. Army, APO 46, New York, N. Y. *President:* Brig. Gen. James K. Wilson, Jr.; *First Vice President:* Col. Donald M. McClain; *Second Vice President:* Col. James Taylor, Jr.; *Secretary:* Major Young O. Kim; *Treasurer:* Lt. Colonel Dan P. Briggs.

Gen. Bruce Clarke addressed 15 November meeting, stressing what AUSA can do for the Army, and how important it is for AUSA membership to include personnel of all grades, plus DACs and civilians generally. MSgt Norman H. Ellis and MSgt Raymond L. Griffith reported on their observations at AUSA's 1957 Annual Meeting. Headquarters Seventh Army Glee Club provided entertainment.

HEIDELBERG CHAPTER—Hq USAREUR, APO 403, New York, New York. *President:* Major Gen. G. E. Martin; *First Vice President:* Col. K. E. Adamson; *Second Vice President:* Col. S. E. Otto; *Secretary:* Capt. A. L. Shoaff; *Treasurer:* Major W. H. Brandenburg.

HENRY LEAVENWORTH CHAPTER—614 Delaware Street, Leavenworth, Kansas. *President:* Lt. Col. Harold E. Purdy, USAR; *First Vice President:* Mr. John W. Breidenthal; *Second Vice President:* Col. John H. Hay; *Secretary:* Maj. John H. Cushman; *Treasurer:* Mr. George H. Ryan.

INDIANA CHAPTER—711 N. Pennsylvania St., Indianapolis, Indiana. *President:* Maj. Gen. Emmett J. Bean, Rtd.; *First Vice President:* Brig. Gen. John W. McConnell; *Second Vice President:* Colonel James O. Freese; *Secretary:* Major Jack K. Elrod; *Treasurer:* Major Walter J. Schuchmann.

KELLEY BARRACKS CHAPTER—Attn: SGS, APO 107, New York, N. Y. *President:* Col. J. K. Boles; *First Vice President:* Lt. Col. J. T. Joseph; *Second Vice President:* MSgt E. M. Kirlin; *Secretary:* Col. L. G. Robinson; *Treasurer:* Capt. T. J. Duerr.

TOPEKA, KANSAS. Governor George Docking signs Topeka Chapter's charter. Looking on are State Adjutant General Joe Nickell *(left)* and Col. Carl N. Smith *(right)*, Chief of USA Military District, Kansas. Governor Docking and General Nickell had been members of Henry Leavenworth Chapter.

KENTUCKIANA CHAPTER—General Delivery, Fort Knox, Kentucky. *President:* Dr. Phillip Davidson; *First Vice President:* Mr. Thomas Graham; *Second Vice President:* Mr. Ducat McEntee; *Secretary:* Capt. Clarence W. Pratt; *Treasurer:* Capt. Wilbur T. Whitehead; *Asst. Secretary:* MSgt Robert J. McDonald.

LAWTON-FORT SILL CHAPTER—*Secretary:* Maj. Rawlins M. Morris, P.O. Box 84, Lawton, Okla. *President:* Mr. George Page; *First Vice President:* Mr. Milton Worley; *Second Vice President:* Mr. Floyd Zook; *Treasurer:* Brig. Gen. John F. Bird, Rtd.

MACON COUNTY CHAPTER—*Secretary:* Capt. Richard G. Derby, Adjutant, Decaur Signal Depot, Decatur, Illinois. *President:* Col. Harold Schmitt, USAR; *First Vice President:* Lt. Col. Fred J. Hays, Rtd.; *Second Vice President:* Capt. Robert E. Creek, USAR; *Treasurer:* Capt. John T. McCracken.

McCOY-RED CLOUD CHAPTER—*Secretary:* Mr. Robert Ninneman, Tomah, Wisc. *President:* Mr. Frederic D. Rahr; *First Vice President:* Mr. Don Harris; *Second Vice President:* Mr. John Kaehler; *Treasurer:* Mr. Stuart Latimer.

MILWAUKEE CHAPTER—*Secretary:* Mr. George Comte, 5009 N. Cumberland Blvd., Milwaukee, Wisconsin. *President:* Brig. Gen. Don E. Carleton; *First Vice President:* Mr. G. M. Taylor; *Second Vice President:* Lt. Col. Roth S. Schleck; *Treasurer:* Maj. Frank X. Mages.

MONTEREY COUNTY CHAPTER—AUSA, Box 187, Pebble Beach, Calif. *President:* Col. Allen Griffin, AUS-Rtd.; *First Vice President:* Mr. Joseph Juri; *Second Vice President:* Maj. Gen. Robert B. McClure, Rtd.; *Secretary:* Mr. Richard Bennett; *Treasurer:* Col. Frank A. Heywood, Rtd.

SACRAMENTO, CALIF. The Sacramento Chamber of Commerce's breakfast honoring Mother Lode Chapter, AUSA, 15 November 1957.

Almost 1500 turned out to hear Dr. James B. Edson, Office of the Chief of Research and Development, U. S. Army, at Fort Ord Soldiers Club 3 December. Dr. Edson spoke on space travel, satellites, and missiles. Meeting was preceded by a dinner, honoring Dr. Edson. Chapter points out that 1500 is 1% of the population of the chapter area.

MOTHER LODE CHAPTER—*Secretary-Treasurer:* Lt. Col. William L. Shaw, NGUS, 3701 College Ave., Sacramento, Calif. *President:* Brig. Gen. A. M. Shearer, Rtd.; *First Vice President:* Mr. E. A. Combatalade; *Second Vice President:* Mr. George E. Holt.

Mother Lode Chapter and AUSA were honored at the Sacramento City-County Chamber of Commerce November Membership breakfast. General Shearer, Chapter President, introduced the speaker of the day, Mr. Robert L. Johnson, of Douglas Aircraft Company, who spoke on "United States Missile Development." In his introduction, General Shearer announced AUSA's objectives and program, and made some brief remarks about his attendance at AUSA's 1957 Annual Meeting. Approximately 350 civic leaders, including the Mayor of Sacramento and State Assemblyman McBride, attended the breakfast.

NEBRASKA CHAPTER—c/o U. S. Army Military District, Nebraska, 21st and Woolworth Avenue, Omaha, Nebraska. *President:* Maj. Charles E. Artzberger, USAR; *Secretary-Treasurer:* Lt. Col. Robert J. Brown, USAR.

Geographic Area: The State of Nebraska.

Chartered 27 November 1957.

NEW ORLEANS CHAPTER—4400 Daupine St., New Orleans 40, La. *President:* Mr. Wallace M. Davis; *First Vice President:* Col. Donald E. MacDonald; *Second Vice President:* Brig. Gen. Robert V. Maraist, USA-Rtd.; *Third Vice President:* Mr. Jonas C. Sporl; *Secretary:* Maj. Louis Robillia, Jr., USAR; *Treasurer:* Mr. Newton D. McLean.

NEW YORK CHAPTER—*President:* Lt. Colonel Charles I. Katz, USAR, 250 West 57th Street, New York 19, New York; *First Vice President:* Col. Arthur D. Hirt, USAR; *Second Vice President:* Lt. Col. Pelham St. George Bissell, III, USAR; *Secretary:* Major Emilie L. Berkley, USAR; *Treasurer:* Col. Lloyd W. Stearns, USAR.

NEWTON D. BAKER CHAPTER—*Secretary:* Col. Richard L. Gillespie, USAR, Veterans Admin. Regional Office, Cuyhoga Building, Cleveland 14, Ohio. *President:* Hon. Robert H. Jamison; *First Vice President:* Gen. William F. Hoge, USA-Rtd.; *Second Vice President:* Brig. Gen. George R. Schmucker, USAR-Rtd.; *Treasurer:* Lt. Col. Henry E. Zachman, USAR.

NORTH FLORIDA CHAPTER—P.O. Box 731, Tallahassee, Florida. *President:* Lt. Col. Jessie F. Warren, USAR; *First Vice President:* Lt. Col. Jay L. Hall, NGUS; *Second Vice President:* Lt. Col. Samuel L. McCall, USAR; *Secretary:* MSgt William L. Tumlin, RA-Rtd.; *Treasurer:* Lt. Col. John E. Miklos, USAR.

Geographic Area: the nineteen counties west and north of the Suwanee River in the State of Florida (Jackson, Calhoun, Liberty, Gulf, Franklin, Gadsden, Wakulla, Leon, Jefferson, Madison, Taylor, Lafayette, Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington and Bay).

Chartered 27 November 1957.

NORTHEAST FLORIDA CHAPTER—P.O. Box 3141, Jacksonville, Florida. *President:* Mr. Henry J. Wolfs; *First Vice President:* Mr. Frank F. Strickland; *Second Vice President:* Mr. J. A. Dionne; *Secretary:* CWO Robert J. Crawford, USAR; *Treasurer:* Mr. Jacob W. Dehaan.

NORTHERN DELAWARE CHAPTER—P.O. Box 607, Wilmington 99, Delaware. *President:* Col. Walter L. Tindall, DNG; *First Vice President:* Mr. Henry N. Marsh; *Second Vice President:* MSgt John E. Mastin; *Secretary:* 1st Lt. Donn Devine; *Treasurer:* Lt. Frank M. Gorsuch, III, USAR.

NURNBERG AREA CHAPTER—*Secretary*: Mr. Melvin L. Morris, Safety and Security Branch, European Exchange System, APO 245, New York, N. Y. *President:* Col. John W. Gorn; *First Vice President:* Capt. Robert E Hart; *Second Vice President:* Capt. L. H. White.

OKLAHOMA CITY CHAPTER—1101 North Broadway, Oklahoma City, Oklahoma. *President:* Col. Charles E. Tompkins; *First Vice President:* Brig. Gen. Paul B. Bell; *Second Vice President:* Col. John W. Long, AUS-Rtd.; *Secretary:* 1st Lt. Ruth Anne Love, ANC; *Treasurer:* Col. Luzerne M. Tidd, AUS-Rtd.

OZARK CHAPTER—*Treasurer:* MSgt Marvin M. Jenkins, Post Transportation Office, Fort Chaffee, Ark. *President:* Maj. Gen. Thomas W. Dunn; *First Vice President:* Col. F. G. Stritzinger, IV; *Second Vice President:* Lt. Col. C. E. Canine; *Secretary:* Mrs. Helen R. Scott.

PIKES PEAK CHAPTER—P.O. Box 2442, Colorado Springs, Colorado. *President:* Lt. Col. J. D. Ackerman, USAR; *Executive Vice President:* Major Gen. William H. Gill, USA-Rtd.; *Vice President for Membership:* Mr. George S. Winters; *Vice President for Programs:* Mr. Samuel T. Jones, Jr.; *Secretary:* Lt. Col. Frank A. Golbey AUS-Rtd.; *Treasurer:* Major H. C. Fleming, Jr., USAR.

PINELLAS CHAPTER—*Secretary:* Capt. Robert M. Dobarganes, USAR, 6414 Sandpiper Way, St. Petersburg 7, Fla. *President:* Brig. Gen. E. W. Piburn, USA-Rtd.; *First Vice President:* Col. James P. Schwartz, USAR; *Second Vice President:* Col. Alex J. Robinet, USAR-Rtd.; *Third Vice President:* Col. Nonie W. Gable, NGUS; *Treasurer:* MSgt William M. Bohannon, Jr., USAR.

POLK CHAPTER—*Secretary:* Maj. LeRoy Conklin, Fort Polk, La. *President:* Mr. F. E. Hernandez; *First Vice President:* Mr. F. H. Coughlin; *Second Vice President:* Mr. Euclid Morris; *Treasurer:* Mr. Keith Pigott.

SAN BERNARDINO COUNTY CHAPTER—c/o Lt. Col. David D. Fleming, Board of Governors, Camp Irwin, California. *President:* Mr. George W. Savage; *First Vice President:* Mr. Victor J. Smith; *Second Vice President:* Lt. Col. Christian E. Petersen, AUS-Rtd.; *Secretary:* MSgt Alfred Schmidt; *Treasurer:* SFC Gerald Morgan.

SAN FRANCISCO CHAPTER—*Secretary:* Col. C. C. W. Allan, Deputy Chief of Staff for Public Affairs, Hq Sixth U. S. Army, Presidio of San Francisco, California. *President:* Mr. Frederick M. Fisk; *First Vice President:* Lt. Gen. Claude B. Ferenbaugh, USA-Rtd.; *Second Vice President:* Mr. William M. McNabb; *Treasurer:* Mr. Albert Leslie.

SARASOTA-BRADENTON AREA CHAPTER—P.O. Box 3636, Sarasota, Florida. *President:* Lt. Col. James F. Kahlenberg, USAR; *First Vice President:* Capt. Donald Larsen, USAR; *Second Vice President:* Lt. Col. Gerald Ludwig, USAR; *Third Vice President:* Major W. S. Telford, Jr., USAR; *Secretary-Treasurer:* Lt. Col. Edward J. Heney, USAR.

SEATTLE CHAPTER—The Officers' Open Mess, Fort Lawton, Washington. *President:* Mr. Arthur T. Lee; *First Vice President:* Mr. Joseph A. Sweeney; *Second Vice President:* Brig. Gen. Harold L. Goss, USAR-Rtd.; *Secretary:* Col. John R. Dey; *Treasurer:* Mr. Paul Danforth.

SIOUX FALLS CHAPTER—*Secretary:* Capt. James E. Moore, 2316 S. Third Street, Sioux Falls, S. D. *President:* Mr. Dan Dugan; *First Vice President:* Mr. Al A. Schock; *Second Vice President:* Mr. William C. Duffy; *Treasurer:* 1st Lt. Fred Masek.

SOUTH FLORIDA CHAPTER—P.O. Box 8173, Miami 46, Florida. *President:* Maj. John R. Lindsey, USAR; *First Vice President:* Lt. Col. T. A. Price, Rtd.; *Second Vice President:* Col. Robert A. Ballard, NG; *Secretary:* WOJG Harold M. Word, NG; *Treasurer:* Capt. Douglass D. King, Jr., USAR.

SOUTHEAST ALABAMA CHAPTER—P.O. Box 159, Fort Rucker, Alabama. *President:* Mayor M. N. Brown; *First Vice President:* Mr. Selden Bailey; *Second Vice President:* Mayor Douglas Brown; *Third Vice President:* Mr. Rex Roach; *Secretary-Treasurer:* Lt. Col. Robert L. Huffaker.

More than 600 members and guests attended the Charter Banquet held 19 November at Army Aviation Center, Fort Rucker. Lt. Gen. Walter L. Weible, Executive Vice President, AUSA, was principal speaker. Others on speakers' platform included Congressman and Mrs. George Andrews, Congressman George M. Grant, Lt. Gov. W. S. Hardwick, Maj. Gen. H. H. Howze, Brig. Gen. E. F. Esterbrook, and Brig. Gen. B. S. Cairns.

SOUTHEASTERN NEW MEXICO CHAPTER—*Secretary:* Cpl. William I. Anderson, Office of the Unit Advisor (USAR), Municipal Airport

Building, Roswell, New Mexico. *President:* Lt. Col. Thomas B. Stapp, USAR; *First Vice President:* Lt. Col. James B. Stapp; *Second Vice President:* 1st Lt. Burl J. Wilkerson; *Treasurer:* Capt. Maurice P. Hinman.

SOUTHERN ARIZONA CHAPTER—*President pro tem:* Mr. F. W. Boyd Allen, Alumni Association, University of Arizona, Tucson, Arizona; *Treasurer pro tem:* Mr. Robert W. Heyer.

TAMPA AREA CHAPTER—*President:* Lt. Col. Arthur D. Brown, P.O. Box 434, Tampa 1, Florida; *First Vice President:* Lt. Col. Judson B. De Loach; *Second Vice President:* Maj. Lambert P. Friederich; *Third Vice President:* 1st Lt. John Clements; *Secretary:* MSgt Aubrey W. Akin; *Treasurer:* Lt. Col. Wendell S. Lucas.

THIRD ARMORED DIVISION CHAPTER—Hq 3d Armored Division (Spearhead), APO 39, New York, New York. *Honorary President:* Maj. Gen. Robert W. Porter, Jr.; *President:* Brig. Gen. James D. Alger; *First Vice President:* Lt. Col. George R. Sedberry, Jr.; *Second Vice President:* Lt. Col. Robert J. Bennett; *Secretary:* Maj. Roy W. Burley; *Treasurer:* Capt. Joseph M. Corvino.

Geographic Area: All the area where the division is stationed overseas or in the United States.

Chartered 27 November 1957.

TRI-VALLEY CHAPTER—c/o Unit Advisor, United States Army Reserve, Fargo, N. D. *President:* Maj. Julian L. Benshoof, USAR, *First Vice President:* Mr. Truman C. Wold; *Second Vice President:* Maj. Adolph K. Stromme, USAR; *Corresponding Secretary:* Col. Sidney E. Iverson, USAR; *Recording Secretary:* MSp Frank C. Gumeringer, USAR; *Treasurer:* MSgt Martin A. Holsen, USNG; *Chaplain:* 1st Lt. Archie N. Campbell, USAR.

TWIN CITIES CHAPTER—*Secretary:* Col. John H. Derrick, USA-Rtd., 950 McKnight Building, Minneapolis 1, Minn. *President:* Mr. R. B. Rathbun; *First Vice President:* Brig. Gen. James Myers, USAR; *Second Vice President:* Mr. Clyde A. Parton; *Treasurer:* Lt. Col. Robert L. Stuebing, USAR.

Lt. Gen. James M. Gavin, Chief of Research and Development, U. S. Army, addressed a meeting including almost full chapter membership and 350 guests on the general subject of missiles, on 13 November.

WASHINGTON STATE CHAPTER NO. 1—*Secretary:* Lt. Col. John A. Spencer, Fort Lewis Exchange, Fort Lewis, Washington. *President:* Col. James Stack, USA-Rtd.; *First Vice President:* Mr. Harry L. Minor; *Second Vice President:* Mr. Fred Osmers; *Treasurer:* Mr. Carl Phillips.

WESTCHESTER COUNTY CHAPTER—Box 444, Hq U. S. Army Garrison, Fort Slocum, N. Y. *President:* Col. L. N. Cron; *First Vice President:* Chap. (Col.) James T. Wilson; *Second Vice President:* Mr. John Leykam; *Secretary-Treasurer:* Mr. Harold Greene.

WOLTERS CHAPTER—c/o Information Section, Camp Wolters, Mineral Wells, Texas. *President:* Mr. Tom Creighton; *First Vice President:* Mr. Edgar Bowden; *Second Vice President:* Dr. H. A. Zappe; *Third Vice President:* Col. Chester H. Meek; *Corresponding Secretary-Treasurer:* Major John R. Burns; *Recording Secretary-Treasurer:* Mr. Jess Everett.

ROTC COMPANIES

CANISIUS COLLEGE COMPANY, Canisius College, Buffalo, New York —*Captain:* Cadet Daniel T. Kirst; *First Lieutenant:* Cadet Thomas B. Block; *Second Lieutenant:* Cadet Joseph S. DePaolo; *First Sergeant:* Cadet Daniel W. Sullivan.

At meeting 20 November, Company voted to hold a Christmas party for orphans, in addition to a Company Christmas party in the Student Lounge. Capt. Donald E. Deehan, faculty advisor, used films of sporting events to illustrate teamwork, fair play, conditioning and coordination in training activities. Weapons films were also shown.

CITADEL COMPANY, The Citadel, Charleston, S. C.—*Captain:* Cadet Edwin C. King; *First Lieutenant:* Cadet Terry D. Cordell; *Second Lieutenant:* Cadet Charles M. Watson, Jr.; *First Sergeant:* Cadet Jimmie E. Jones, Jr.

CLARKSON COMPANY, Clarkson College of Technology, Potsdam, New York—*Captain:* Cadet Donald Broadhurst; *First Lieutenant:* Cadet Robert F. Koenig; *Second Lieutenant:* Cadet Charles Fish; *First Sergeant:* Cadet Sigmund Mierzwa.

DAKOTA COMPANY, North Dakota Agricultural College, Fargo, N. D. —*Captain:* Cadet Arnold Ellingson; *First Lieutenant:* Cadet Neal R. Bjornson; *Second Lieutenant:* Cadet Melvin G. Werth; *Social Chairman:* Cadet Curtis L. Stromstad; *First Sergeant:* Cadet W. Dale Ruff.

Lt. Col. Harry W. Snavely, PMST, was designated to attend chartering of Sioux Company, at University of North Dakota. Capt. Ellingson read AUSA Objectives, adopted at 1957 Annual Meeting, and was followed by Capt. Robert W. Sennewald, Advisor, with comments concerning the effect of the objectives on the ROTC. First Sergeant Ruff read the report of the AUSA ROTC Company luncheon held in conjunction with 1957 Annual Meeting.

DICKINSON COLLEGE COMPANY, Dickinson College, Carlisle, Pa.— *Captain:* Cadet Wilbur M. Otto; *First Lieutenant:* Cadet Fred Conrad; *Second Lieutenant:* Cadet William Rogers; *First Sergeant:* Cadet Dick Schafer; *PIO Sergeant:* Cadet William Black.

Col. Alfred K. Clark, Signal Corps, a student at the Army War College, spoke on the Pentomic concept at meeting 14 November.

DUQUESNE UNIVERSITY COMPANY, Duquesne University, Pittsburgh 19, Pa.—*Captain:* Cadet Francis R. Schmidt; *First Lieutenant:* Cadet Eligio A. Deluca; *Second Lieutenant:* Cadet Robert Rocks; *First Sergeant:* Cadet James H. McAllister.

EDMUND R. WALKER COMPANY, University of Connecticut, Storrs, Conn.—*Captain:* Cadet Francis E. Dion, Jr.; *First Lieutenant:* Cadet Liudas Bajorinas; *Second Lieutenant:* Cadet Howard M. Belinsky; *First Sergeant:* Cadet Edward H. Soderberg.

Maj. Gen. Edmund R. Walker, Commanding General, 43d Division, for whom the Company was named, spoke on the National Guard at meeting 7 November.

FLORIDA SOUTHERN COLLEGE COMPANY, Florida Southern College, Lakeland, Florida—*Captain:* Cadet Dale W. Pierce; *First Lieutenant:* Cadet Robert P. Jones; *Second Lieutenant:* Cadet William R. Hatton; *First Sergeant:* Cadet Justus R. Sackett, Jr.

Organization meeting held 24 October confirmed above provisional officers. Upon request by Lt. Col. William R. Nealson, PMST, Company agreed to assist in formation of a Lakeland Chapter of AUSA. Company has been invited to attend a meeting of Tampa Area Chapter.

GEORGETOWN UNIVERSITY ROTC COMPANY, Georgetown University, Washington, D. C.—*Captain:* Cadet George F. Landegger; *First Lieutenant:* Cadet John A. Leide; *Second Lieutenant:* Cadet Robert J. Spazzarini; *First Sergeant:* Cadet Joseph J. Kane.

GORDON COMPANY, Gordon Military College, Barnesville, Georgia —*Captain:* Cadet William A. McKoy; *First Lieutenant:* Cadet Peter L. Banks; *Second Lieutenant:* Cadet Ward M. Chewning, Jr.; *First Sergeant:* Cadet Max E. Sappington.

Chartered 27 November 1957.

IDAHO STATE COLLEGE COMPANY, Idaho State College, Pocatello, Idaho—*Captain:* Cadet Dean L. Showers; *First Lieutenant:* Cadet Ronald Pugmire; *Second Lieutenant:* Cadet Harvey I. Buckles, *First Sergeant:* Cadet Corwin Lott.

Capt. R. E. Baugh, Executive Officer, Aviation Section, 9th Infantry Division and Fort Carson, spoke on Army Aviation at first postcharter meeting, 24 November. Capt. Baugh stressed opportunities in an Army Aviation career for young officers.

ILLINI COMPANY, University of Illinois, Champaign, Illinois— *Captain:* Cadet Armand Ferrini; *First Lieutenant:* Cadet Kenneth Weber; *Second Lieutenant:* Cadet Charles W. Thompson; *First Sergeant:* Cadet Ray L. Allison.

Meeting 19 November was built around the theme of life in the service, with discussion by Captain and Mrs. Mann, and Lieutenant and Mrs. Gurtin.

INDIANA STATE TEACHERS COLLEGE ROTC COMPANY, State Teachers College, Indiana, Pennsylvania—*Captain:* Cadet Harry D. Fair; *First Lieutenant:* Cadet Warren Edmiston; *Second Lieutenant:* Cadet Paul

J. Zurovchak; *First Sergeant:* Cadet Bernard A. McCue.

Col. J. E. Golden spoke to the Company at Charter meeting 20 November on the place of the Army in national defense, and the importance of the ROTC in supplying officers for the Army.

JOHN CARROLL UNIVERSITY COMPANY, John Carroll University, Cleveland 18, Ohio—*Captain:* Cadet George W. Makra; *First Lieutenant:* Cadet Jerry Porter; *Second Lieutenant:* Cadet Robert Seiler; *First Sergeant:* Cadet Roger Hurley.

LOUISIANA STATE UNIVERSITY COMPANY, Louisiana State University, Baton Rouge 3, La.—*Captain:* Cadet Lamarr E. Coxe; *First Lieutenant:* Cadet Frank A. Atkins; *Second Lieutenant:* Cadet J. D. LeBlanc; *First Sergeant:* Cadet Thomas J. Barham.

LOYOLA COLLEGE COMPANY, Loyola College, Baltimore 10, Md. —*Captain:* Cadet T. McHugh; *First Lieutenant:* Cadet K. Lee; *Second Lieutenant:* Cadet J. Murphy; *First Sergeant:* Cadet L. Romeo.

THE LOYOLA UNIVERSITY COMPANY, Loyola University, 6525 Sheridan Road, Chicago 26, Illinois—*Captain:* Cadet Thomas Nolan; *First Lieutenant:* Cadet Eugene Crosant; *Second Lieutenants:* Cadets Gerald Pierce and Harold Murphy; *First Sergeant:* Cadet Paul M. Maffia.

MOCCASIN COMPANY, University of Chattanooga, Chattanooga, Tenn. —*Captain:* Cadet John Doyle; *First Lieutenant:* Cadet Hoyt Jenkins; *Second Lieutenant:* Cadet Lawrence Putnam; *First Sergeant:* Cadet Thomas Murphy.

THE MONTANA STATE UNIVERSITY ARMY ROTC COMPANY, Montana State University, Missoula, Montana—*Captain:* Cadet William Good; *First Lieutenant:* Cadet Gerald Miller; *Second Lieutenant:* Cadet Fred Weldon; *First Sergeant:* Cadet William Crawford.

Lt. Gen. Frank W. Milburn, USA-Rtd., spoke to meeting 5 November on the Code of Conduct for the Armed Services. Cadet Richard A. Anderson, delegate to 1957 AUSA Annual Meeting, spoke to 19 November meeting on his experiences in Washington.

NEW YORK UNIVERSITY HEIGHTS COMPANY, New York University, New York 53, N. Y.—*Captain:* Cadet Dennis C. Howley; *First Lieutenant:* Cadet Michael Katos; *Second Lieutenant:* Cadet Eugene Pisani; *First Sergeant:* Cadet Ronald DiStefano.

AUSA MEDALS AWARDED TO STUDENTS OF BRANCH SCHOOLS

USA Air Defense School, Fort Bliss, Texas

MAJ. JOSEPH C. NEWELL	7 Feb 57	..Assoc., Surface-to-Air Missile Officer Advanced Course
MAJ. HARRY V. DAVIS	26 Mar 57	..Assoc., AAA Officer Advanced Course
CAPT. EDWIN F. WHITNEY	29 May 57	..Assoc., AAA Officer Advanced Course
CAPT. KERMIT T. WILLIAMS	19 Jun 57	..Assoc., AAA Missile Officer Advanced Course
1ST. LT. AVON R. OMPS	16 Aug 57	..Assoc., AAA Officer Advanced Course
MAJ. SIDNEY HOFFMAN	14 Sep 57	..Assoc., AAA Missile Officer Advanced Course
CAPT. JAMES E. GORMAN	14 Sep 57	..Assoc., AAA Missile Officer Advanced Course

USA Engineer School, Fort Belvoir, Virginia

2D LT. SIEGFRIED L. GRAEBNER ...	31 Jan 57	...6th Engineer Officer Basic Class
2D LT. GARY H. CARLSEN	27 Jun 57	..15th Engineer Officer Basic Course

USA Artillery and Missile School, Fort Sill, Oklahoma

2D LT. ROBERT J. RODGERS	19 Apr 57	..Officer Candidate School

USA Signal School, Fort Monmouth, New Jersey

CAPT. CHARLES B. LEAVENWORTH .	11 Feb 57	..Assoc., Signal Officer Advanced Course
CAPT. BRYAN W. GAY	7 Mar 57	..Assoc., Signal Officer Advanced Course
CAPT. ROBERT A. ALGAROTTI	5 Apr 57	..Assoc., Signal Officer Advanced Course

"OLE MISS" COMPANY, The University of Mississippi, University, Mississippi—*Captain:* Cadet Monroe Pointer; *First Lieutenant:* Cadet Robert M. Williams, Jr.; *Second Lieutenant:* Cadet Kent E. Lovelace; *First Sergeant:* Cadet Lowell O. Winston, Jr.

PENNSYLVANIA STATE UNIVERSITY COMPANY, The Pennsylvania State University, University Park, Pa.—*Captain:* Cadet Gordon K. Pollard; *First Lieutenant:* Cadet Keith F. Vansant; *Second Lieutenant:* Cadet Albert J. Chukusky; *First Sergeant:* Cadet Frank H. Morris.

ROBERT E. SYLVEST COMPANY, Northwestern State College of Louisiana, Natchitoches, La.—*Captain:* Cadet Robert F. Kelley; *First Lieutenant:* Cadet Gerard Schorr; *Second Lieutenant:* Cadet Donald G. Walker; *First Sergeant:* Cadet George C. Davis.

Meeting of 11 November viewed film, "The Role of the Army," and met with new Advanced Course cadets, explaining aims and purposes of AUSA.

ST. NORBERT COLLEGE COMPANY, St. Norbert College, West de Pere, Wisconsin—*Captain:* Cadet Duane L. Hoerning; *First Lieutenant:* Cadet Richard Van Egeren; *Second Lieutenant:* Cadet Lawrence Woulf; *First Sergeant:* Cadet John Payne.

SIENA ROTC COMPANY, St. Bernardine of Siena College, Loudonville, New York—*Captain:* Cadet Paul R. Riley, Jr.; *First Lieutenant:* Cadet John W. Stahlman; *Second Lieutenant:* Cadet Louis R. LaGasse; *First Sergeant:* Cadet J. Vincent Chesterfield.

SIOUX COMPANY, University of North Dakota, Grand Forks, North Dakota—*Captain:* Cadet Darryl Earl Durgin; *First Lieutenant:* Cadet James Roger Zavoral; *Second Lieutenant:* Cadet Van Kirk Carlson; *First Sergeant:* Cadet Charles John Bruce Gessner.

Organization meeting held 19 November; speaker was Col. J. K. Addison. Deans Robertson and Lewis of the faculty attended. Military Ball committee named.

TEXAS CHRISTIAN UNIVERSITY COMPANY, Texas Christian University, Fort Worth 9, Texas—*Captain:* Cadet Larry Lands; *First Lieutenant:* Cadet Frank Hyde; *Second Lieutenant:* Cadet Kenneth Howard; *First Sergeant:* Cadet Jimmy Lindsey; *Sergeants:* Cadets Ronnie Coleman, George Depee, Joe Dulle and Robert Fleming.

TEXAS TECH COMPANY, Texas Technological College, Lubbock, Texas —*Captain:* Cadet Neil Mark Wyatt; *First Lieutenant:* Cadet Donald L. Zimmerman; *Second Lieutenant:* Cadet Michael H. Williamson; *First Sergeant:* Cadet Joe A. Spears.

Panel discussion by officers of the ROTC staff considered duties and activities of the newly commissioned officer, and the place of the young officer's wife in the Army.

UNIVERSITY OF DETROIT CAVALIER COMPANY, University of Detroit, Detroit 21, Michigan—*Captain:* Cadet Daniel Potter; *First Lieutenant:* Cadet James Murphy; *Second Lieutenant:* Cadet Ronald Felice; *First Sergeant:* Cadet Michael J. Wells.

UNIVERSITY OF IDAHO COMPANY, University of Idaho, Moscow, Idaho—*Captain:* Cadet Warren G. Hawley; *First Lieutenant:* Cadet Larry P. McDonald; *Second Lieutenant:* Cadet Gary G. Sturman; *First Sergeant:* Cadet Michael S. Floan.

UNIVERSITY OF TEXAS COMPANY, University of Texas, Austin 12, Texas—*Captain:* Cadet Donald Raynsford; *First Lieutenant:* Cadet Charles C. Mason; *Second Lieutenant:* Cadet Don K. Meier; *First Sergeant:* Cadet Mark S. Smith.

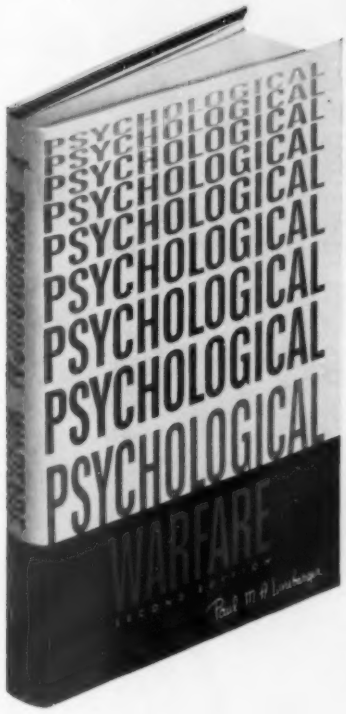
VALLEY FORGE COMPANY, Valley Forge Military Academy, Wayne, Pa.—*Captain:* Cadet David Sholly; *First Lieutenant:* Cadet George Freeman; *Second Lieutenant:* Cadet Robert Wood; *First Sergeant:* Cadet Ralph J. Hornaday.

Meetings, unreported previously, were held on 30 September, 1 November and 25 November. Above officers elected at September meeting. Cadets Hornaday and Humphries reported on AUSA's 1957 Annual Meeting at the early November meeting; Lt. Col. Baker, PMST, spoke on Korea at the 25 November meeting.

WEST TEXAS STATE COMPANY, West Texas State College, Canyon, Tex. —*Captain:* Cadet Gaylon L. Johnson; *First Lieutenant:* Cadet Jackie J. Alexander; *Second Lieutenant:* Cadet Ralph D. Gowen; *First Sergeant:* Cadet Sam W. Hodges, Jr.

PSYCHOLOGICAL WARFARE

By Lt. Col. Paul M. A. Linebarger, MI, USAR



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Your Association of the U. S. Army is fighting for a stronger, more mobile and harder-hitting U. S. Army. In the months ahead AUSA will increase the momentum of its planned assaults against the complacency and short-sightedness that discount the threats that face us, and evade the requirements of national security . . . against the delusion that there is a cheap and easy way to military security.

To sustain and increase the influence AUSA exerts nationally and through its local chapters, all who believe that a stronger, more mobile and harder-hitting U. S. Army is essential to our national security are invited to get on the AUSA team.

If you are a Chapter member please renew through your Chapter Secretary. If you are a national member send your dues with your name and address as we have it to the national offices. Whenever you change address notify us promptly. And remember it is essential that we have *your old address* as well as your new one.

If you are now a member of the team stay on it—
Renew your membership regularly

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